

University of Strathclyde Department of Educational Studies

SETTING THE STANDARD

***A STUDY INTO THE IMPROVEMENT OF PERFORMANCE
INDICATORS AND BENCHMARKS IN SCOTTISH FE***

by

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degree of Doctor of Education**

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1 Abstract

Performance information has featured in the reporting of Scottish Further Education college activity through annual reports and through college development plans to a limited extent in the 10 years since college incorporation (1993). There have been five key performance indicators used since 1990 for all of these functions, defined by the Scottish Office in “Measuring Up” (SOED, 1990).

Phase 1 of this study was a review of whether the performance indicators used were valid and reliable, and how well understood the information was within colleges. Phase 2 looked at reasons behind the difficulties and explored approaches to deal with them. Phase 3 described the production of training materials to support changes in practice and Phase 4 discussed the extension of the use of standards to ICT support work. The stronger theoretical model reflecting on the reported experiences of other countries and other sectors was the subject of the literature review.

This study investigated the understanding of performance indicators, identified short term changes needed, proposed short term revisions, and outlined issues for further consideration in the longer term development of performance indicators and benchmarks. In addition, a set of standards for quality improvement for the support area of ICT was developed using self evaluation approaches.

This study demonstrated that there were problems of reliability and validity in collecting and using performance indicators. These differing interpretations of the performance indicators were evident within institutions, across institutions, and across years. In addition, the performance indicator information was not soundly embedded in a clear theoretical model of quality.

2 Introduction

2.1 Why the topic was selected

Further Education (FE) Colleges have, since July 1999, been subject to supervision and funding arrangements mediated through the Scottish Further Education Funding Council (SFEFC). One of the major areas of responsibility that the SFEFC wished to develop was quality assurance and quality improvement. SFEFC had decided to consult colleges and investigate options for a more effective model of quality assurance; this consultation was conducted from November 1999 to March 2000. This study aimed to bring forward information and materials to support the development of quality building on the feedback from the consultation.

SFEFC, established in 1999, shares an executive and staff complement with the Scottish Higher Education Funding Council (SHEFC). Therefore, the staff who now deal with quality within FE have an experience and a perspective from Higher Education (HE) that may impact on their view of quality in FE. It was, therefore, important to deliver a clear study to give confidence to the SFEFC, and a study with enough depth to support college staff involved in implementation. In addition, the study was building on work that had been undertaken to support Her Majesty's Inspectors (HMI) Audit Unit, so the issue of continuity and building on current practices were also important elements of the study.

HMI (now designated Her Majesty's Inspectorate Executive) also hold a responsibility for monitoring and reporting in the area of quality. In particular, the HMI Audit Unit who produce (and publish) reporting information, primarily on schools, was looking for more robust information to allow reasonable comparisons and indications of quality development for colleges. Post-School HMI (a separate Division of HMI) has a primary role of producing institutional, subject and aspect reports on post school provision. The availability of robust

information for measurement and comparison in colleges had long been a challenge for HMI.

In the school sector, this HMI interest has been supported through published performance indicator (PI) information known as "Standard Tables" published through HMI Audit Unit. HMI Audit Unit had expressed an interest in the development of PIs (institutionally based) in colleges and benchmarks (national standards for comparisons) for FE colleges.

The Scottish Further Education Unit (SFEU) has extensively supported the development of quality in colleges, directly and indirectly. The author is the lead officer in SFEU in the area of quality. The self-evaluation model for FE, and the Scottish Office Education and Industry Department (SOEID) quality standards document "Quality Matters" (1998) was developed by HMI, supported by SFEU (lead officers being John McCann HMI and John Laird). Another key contributing body to the quality improvement agenda in FE is a "forum" of quality leaders. The Further Education Quality Improvement Forum (FEQIF), consisting of key figures within the FE Sector, is supported by SFEU. Further, SFEU is working in research and development areas supporting SFEFC in developing a sound information base to support decision making in key areas related to quality.

HMI Audit Unit commissioned SFEU (specifically the author as Lead Officer) to investigate the use of PIs within the college self evaluation model. By extending this enquiry, a broader view and information base will then be available to inform ideas within SFEFC in their consideration of quality issues.

Key point from section 2.1

This topic was selected as a result of the needs of the key agencies supporting quality in FE.

2.2 The purpose and direction of the study

The study took place in the context of a general move within the colleges and key agencies to enhance the use of self evaluation to improve quality. The author had recognised a need to improve the impact of self evaluation. The purpose of the study was to seek and support enhancement and greater impact by improving the current self evaluation model and extending the current self evaluation model.

Improving the model was done through investigating the basic information that colleges use to inform reflective judgements within the self evaluation process. Earlier studies, such as the SFEU Benchmarking study, suggested that there were serious flaws in the use of PIs by colleges (SFEU 1999). The study therefore concentrated on checking and improving the understanding of the PIs in common use, working toward a more uniform definition and developing training materials to extend that understanding through a wider range of staff.

This improvement process was conducted by taking steps to understand and correct weaknesses resulting from poor or inconsistent understanding of PIs. This involved the study into the weaknesses in understanding and application, and developing guidance and training materials to help a wide range of staff understand and apply the PIs more consistently.

Extending the model was done by looking at one key area of college functioning that was not covered within the current self evaluation model. The current model covered two key areas: Management; and Teaching and Learning. The Further Education Quality Improvement Forum (FEQIF) expressed an interest in extending the self evaluation model to encompass a range of support services. Support services in this context would cover areas of activity such as ICT support or estates management. In these areas of work (just as with the Management area of the current standards) the learner is not the only direct customer. In support services, it is college staff as well as learners who are the

users of the service. The SFEFC have given substantial additional funding to colleges for investment in ICT, £28m in 2001/2002. Given this, and the extent to which ICT support has an impact on colleges, ICT support was the area selected for the extension of the self evaluation model.

The extension of the self evaluation model was approached through developing a new set of standards to structure and support self evaluation for ICT support staff. This includes the development of a set of Quality Indicators (QIs). In addition to the standards, a training programme and support materials were developed and provided to support the implementation.

This study concentrated on the research required to inform this work. Although there are two distinct aspects of this work, they both concentrate on the enhancement of the current self evaluation model, and the development of professional practice in quality management in FE. Both the improvement aspect and the extension aspect of the work share a common goal of enhancement, and share the benefits of illumination through literature research and comparative studies. Therefore, this work is essentially one study with two linked strands aimed at enhancing the practices in, and benefits from, self evaluation in FE.

2.3 The research questions

It is broadly recognised that the investigative and developmental work undertaken within this study will be useful in both informing decision making (in SFEFC and HMI considerations) and in impacting on practice in Colleges. The context of this work is for SFEU, SFEFC, HMI and colleges to develop improved practice in supporting quality in FE. As with all strategic development, a central starting point is the internal and external environmental scan. This study formed the base of that internal and external environmental scan. The questions have been defined through the work with the lead agencies and colleges, and refined as the study progressed.

The key questions for this study are -

1. Are the current performance indicators understood by college staff?
2. Are the current performance indicators used effectively in Further Education?
3. What improvements can be made in the use of performance indicators?

These three questions were the central questions for this study to lead to improvement in the current self evaluation model. The ability to use and interpret PIs as evidence with greater clarity, knowing the statistics to be more valid and reliable will enhance confidence and improve use. It would also be appropriate to note that, as a vocationally based study, the intent of this work was wider than providing an answer to these questions, and aimed to develop materials to support implementation of any useful findings.

A further two questions arose for investigation to extend the current model of self evaluation to cover the area of ICT support services. These questions relate to the initial three questions in two key ways: in purpose; and in information base. The common purpose is about enhancing the current self evaluation model (these two questions focus on extending that model). The information base that they share is the written materials, international comparisons, sector

comparisons and focus group feedback that form the research base of this study. The key additional questions that were explored are -

4. What can the literature tell us about developing quality standards for IT support?
5. Can useful quality improvement mechanisms for IT support standards be modelled, developed and tested?

This last question required practical research and development activity leading to the development of materials for the question to be fully addressed, rather than a literature search for a simple and clear answer. It is important, therefore, to recognise this study as both a research study and a professional doctorate, impacting on both the body of knowledge in this area and the practice of staff in the FE sector.

Where the questions have a level of specificity, they do include value laden terms such as "effectively" and "improvements". This puts the enquiry on a basis of using qualitative information as well as some quantitative data sets. Further, the broad nature of the questions will result in wide ranging findings, with breadth rather than depth within the work.

This study has been broken down to three initial phases, each of these phases of activity running parallel to the literature review.

Phase 1 - Investigated the use and understanding of PIs and benchmarks in colleges, using the specific example of Student Achievement Ratio by Unit (SARU). This study looked at the validity and reliability of the information.

Phase 2 - Considered the wider range of the five primary PIs (see section 2.2.1) and modelled some potential improvements or changes that would support more effective adoption and use.

Phase 3 - Considered some revised PI definitions, and prepared a handbook for information and training. This work also embedded the development proposals in the context of lessons learned through a wider literature review.

These three initial phases led to the extension of the work to look at the use of “standards” within self evaluation, and the practical application of standards in a growing new field of activity in FE, the improvement of ICT support services.

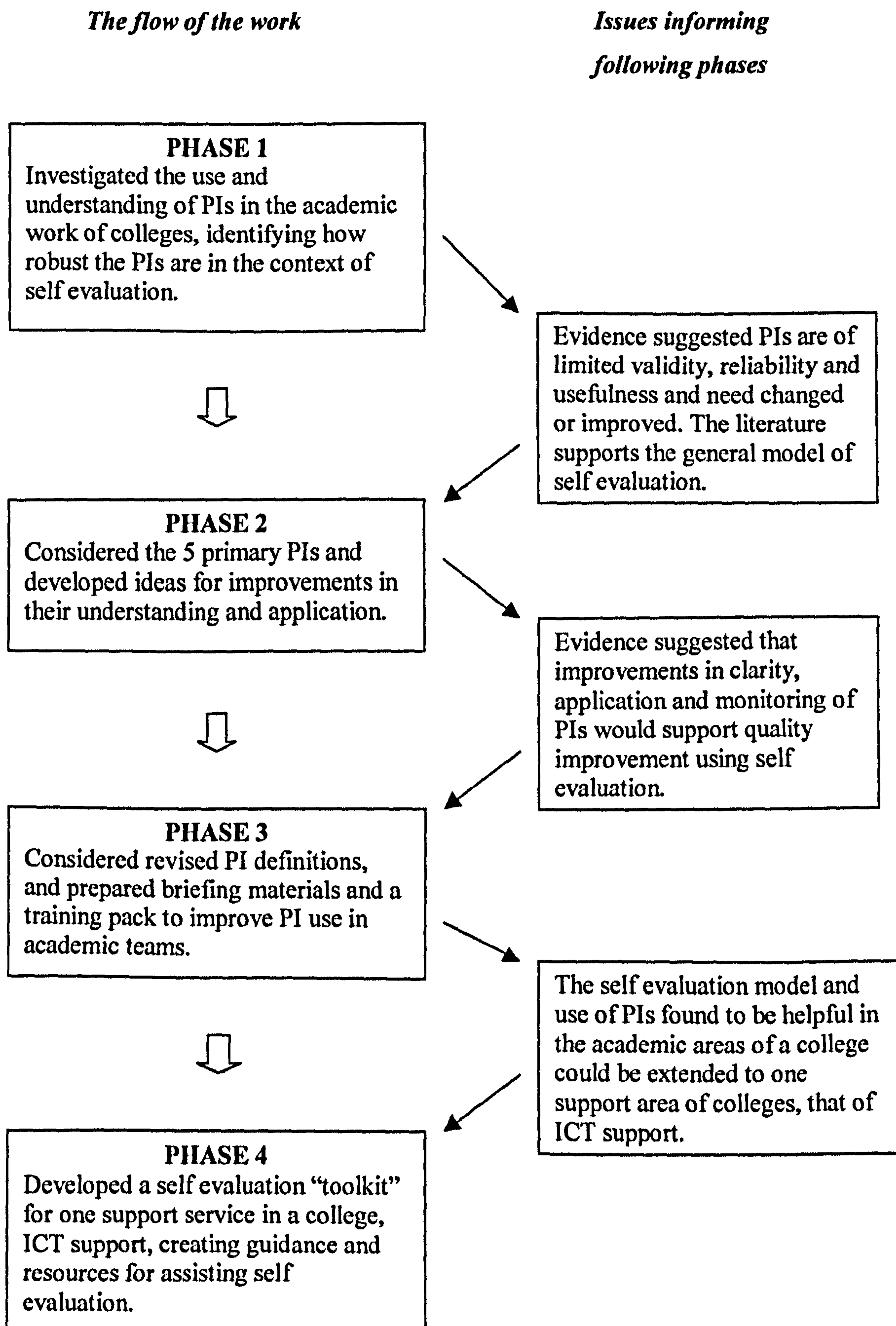
Phase 4 – Considered and established a model for self evaluation of a college support service, the provision of ICT support.

This research activity is laid out in diagrammatic form at the end of this chapter in diagram 1.

Key points arising from section 2.3

- Five key questions were defined for this study.
- HMI has an interest in the reliability and validity of PIs.
- SFEFC wish to consider the publication of PI and benchmark information.
- SFEU wish to develop useful PIs to support the quality improvement process.
- Phased development work, funded by HMI and delivered through SFEU is planned in 4 phases to deliver an improved system.
- Initial research led the enquiry work to extend to the use of standards in support activity in colleges, specifically in the support of ICT.

Diagram 1 The simplified “map” of the steps in the study



2.4 The professional relevance of the study

There are four specific aspects to the professional relevance of this study, these are:

- the relevance to FE Management;
- the direct relevance to the author's work;
- the professional and academic link to this doctorate research work; and
- the professional development objectives of the task.

The following description expands these key headings.

2.4.1 The relevance to FE management

Scottish FE colleges were incorporated in 1993 and from the 1st April 1993 the Principal and Chief Executive reported to (and was accountable to) the College Board of Management. At this time, there was no advice or models to measure or judge the performance of FE colleges in any robust comparative way. The Scottish Office (through HMI) listed five PIs, which, based on guidance in the publication 'Measuring Up', were to be published within the college reporting cycle (SOEID 1990). These PIs were:

1. SARU (Student Achievement Ratio by Unit of learning);
2. SPAR (Student Programme Achievement Ratio);
3. PCSR (Post Course Success Ratio);
4. SSR1 (Student Retention Rate at 25% point of programme); and
5. SSR2 (Student Retention Rate at end of programme).

College Boards have used these with various levels of knowledge and involvement to make judgements about performance.

These PIs when collected and published were not verified or checked in any way by anyone external to the college and internal checks (if conducted) were entirely determined (in scope and methodology) through decisions within institutions. Additionally, the PIs were developed before college incorporation to

look at the curriculum delivery only. Hence, colleges used information that may not have been:

- reliable (would give the same results if applied in second or subsequent times);
- valid (did not measure what the college felt it would measure – efficiency or effectiveness);
- complete (missed out organisational efficiency and effectiveness); or
- well used (used for reporting only, not quality improvement).

Checking reliability, validity and use would be of great interest to all the major stakeholders and funders. In addition, this more robust performance information could herald an era of more effective use of information for quality improvement.

2.4.2 The direct relevance to the author's work

As the Director of Professional, Organisation and Curriculum Development within SFEU the author had a central role in researching and supporting quality development for the sector. A large part of his time was spent in consultancy and training activity in the areas of quality and management. The author is an observer on the SFEFC Teaching and Learning Committee. This Committee is central in providing advice to the Council in directing and supporting quality monitoring and improvement within further education.

2.4.3 The professional and academic link with the previous EdD. work

Work to date on the EdD. had focused on two specific aspects of professional activity, further education management and curriculum development. The research, evaluation and development work associated with this study clearly combines these two elements and further enhances the skills applied in the area of academic research. It is essential for the satisfactory completion of the EdD. that the study should integrate previous learning in a way that combines research, effective management, and substantive contribution to the development

of the sector. In this way, the professional development need addressed through this work will be fully met.

2.4.4 The professional development objectives

The professional development objectives of the task are:

- to research in a key area of management, adding to practical experiences and research skills;
- to raise my understanding of PIs and benchmarks;
- to lead a national research and development project in college management; and
- to link key literature with practical development work.

These link in with the previous practical experiences and activities in FE management and link directly with the earlier work in this study programme. Further, this matches my learning and development needs as my limited exposure to research and writing activity with a significant national profile is inhibiting progression and growth opportunities.

Key points arising from section 2.4

The research study relates clearly to the following:

- FE management;
- the work of the author;
- previous strands of the EdD. activity; and
- the professional development needs of the author.

2.5 The role of the author

The author has a role in supporting the development of quality within the FE sector. This role, as Director of Professional, Curriculum and Organisation Development within the SFEU has a focus on the development and support of a quality culture within Scottish FE.

SFEU has made a significant contribution to a wide range of related initiatives in this area of work. Three such major initiatives are:

- the Scottish Quality Management System (SQMS);
- Quality Improvement Through Self Evaluation; and
- the FE Quality Improvement Forum.

2.5.1 SQMS

This development of the SQMS culminated in publishing the SQMS Standards in 1994. These standards, developed with financial support of Scottish Enterprise, are the main quality standards and organisation development tool used in colleges until 1997 (and now careers companies). The standard is still in widespread use, and it has been investigated and modelled in many international settings, notably in Australia and New Zealand. The author has contributed to the support and further development of these standards.

2.5.2 Quality Improvement Through Self Evaluation (SFEU 1997)

The model of Quality Improvement Through Self Evaluation (later revised to the “Quality Matters” publication) was developed jointly by SFEU and HMI in 1997. Specifically, John McCann HMI and the author (John Laird) prepared this document. John McCann had a specific focus of looking at the checklist and standards used by HMI in inspection, ensuring it was updated and could be interpreted and used by college staff. The author had the focus of looking at the implementation and training process, and evaluating (and learning from) the pilot work.

2.5.3 The FE Quality Improvement Forum

The FEQIF was established with the report of the author in 1998, and launched at a prestigious event addressed by the Chair of the SFEFC. The FEQIF is steered by a group of senior managers (substantially at Depute or Assistant Principal level) from the sector with an interest in quality. This group helps determine development projects, research work, and training events for the sector. There is also representation on this group from the Association of Scottish Colleges (ASC), SFEFC and HMI. The author works with this group and ensures all plans and activities are supported.

In addition to these national development activities, the author spends a great deal of time delivering consultancy and training on quality to colleges. Some of this work is through national conferences and publications. However, a great deal is also through on-site consultancy and training workshops.

Key point arising from section 2.5

The author has made a contribution to quality in the sector, specifically through contribution to key projects such as SQMS, Quality Improvement through Self Evaluation, and the FE Quality Improvement Forum.

2.6 The contribution of others to this study

As with any study that underpins development within a professional area, this study had the benefit of support and contributions from professional organisations and colleagues. As a broad description, it would be fair to say that the research steps within this work were determined, designed and evaluated by the author and the conclusions, write up and reporting were delivered by the author. Colleagues with SFEU supported and contributed to the larger scale activities of fieldwork and other organisations and individuals contributed to the feedback, thinking and evaluation of work as it progressed. For clarity, the respective contributions are outlined here, describing briefly the contribution of others to each of the key phases of the work (see diagram 1, section 2.3). It is appropriate to acknowledge the support and contribution of others in making this work achievable. It is also appropriate to thank those colleagues who so positively supported the work, in particular Martin Dunk who has been involved with each phase of the work.

2.6.1 Phase 1

In this phase, the author led the work following the support and impetus given by HMI Audit Unit in raising concerns about limitations of the current quality regime. HMI also provided funds to cover the fieldwork activity and provided some information through agreeing with the author the questions to be raised within the annual programme of college visits by post school HMI. The two officers appointed part-time to support this work also deserve recognition. Helen Ganson (seconded for 10 days from other SQA work) looked at statistical data from SQA and the Scottish Executive, allowing a check to be conducted of the PI information colleges were reporting in interviews. Martin Dunk (seconded part time from Lauder College) supported the implementation of the fieldwork. This involved setting up meetings, setting up events, conducting most of the college based interviews and contribution of views to the research and reporting process. Credit and recognition should also be given to the 11 colleges (who were assured of anonymity) who agreed to contribute to this work in participating

in the research. Without their openness, honesty and desire for improvement, this study would have stalled at the initial steps.

2.6.2 Phase 2

In this phase, the revision of PIs and their definitions required a synthesis and interpretation of the research and feedback. Where this was primarily done by the author, due recognition should be given to Martin Dunk in his contribution to both the thinking and review of information to feed this decision making.

In this phase, due recognition should also be given to HMI and SFEFC in accepting the recommendations of the research, adopting the definitions and publishing the revised PI definitions.

2.6.3 Phase 3

In looking at the definitions and developing training materials, the content of the packs followed on from the earlier work. Where the author made a lead contribution in writing most of the material, Martin Dunk also developed notes, presentation materials and training resources to support the work. In addition, the scale of the work required the author and Martin to be involved in a number of training events with senior managers to disseminate the findings.

Recognition should also be given to the support staff at SFEU for their work in setting up training events and publications.

2.6.4 Phase 4

In this phase, the impetus for change stemmed from the work of SFEFC and the FEQIF in recognising a need to enhance quality models for a greater range of areas of college work. SFEFC, advised by Dr Bill Harvey, Depute Director of Quality and Innovation, provided funding to move this work forward. John McCann from Glenrothes college led the consortium bid to take a model he had

developed within Glenrothes College and make the framework more robust and uniform and provide training and support materials for implementation.

Within this work, much of the fieldwork was co-ordinated by Martin Dunk, and planned through a steering group. Where the author drove the research elements, SFEU staff under the guidance of the author supported some additional fieldwork and publication work. Cathie Smith (SFEU Associate) took and revised some of the training materials initially developed by the author for self evaluation in academic work and revised it to fit with self evaluation for support services. Peter Lanigan (SFEU Project Officer) took forward the work led by the author from the focus group looking specifically at PIs for ICT and extended the material on the web to include exemplar questionnaires and a wider range of potential PIs. Noel Chidwick (technical secondee from Edinburgh's Telford College) took the developed training materials from this work and designed and constructed the internet training package based on those materials.

Key points arising from section 2.7

- The work was supported by a number of agencies and individuals.
- The author led on the research and led the evaluation and write up activity.
- Thanks are expressed to the colleagues who helped with the fieldwork, training and publication.

2.7 Definitions of key concepts

For the purposes of this study, standard definitions of reliability, and validity have been used. This approach to standard definitions is broadly true of all other management terms used within this work. However, the language and terminology that pervades the literature on quality in education can often create ambiguity and confusion. For this reason, it is important to explore some of the key concepts before coming to the definitions adopted for this specific study. The concepts that might be usefully explored are ‘quality’, ‘indicators’, and ‘evaluation’.

2.7.1 The concept of quality

The concept of quality is one that is widely used carrying the assumption that it has a universal meaning; this is questionable. The root of the word lies in the Latin pronoun “qualis” which is used to ask questions about things. From this derivation, the initial meaning appears to be value free, not suggesting that the ‘qualitative’ description of something is positive or negative. It is, in essence, seeking description or judgement rather than making judgement. This is very different from the common use of the term which implies an improved or enhanced standard. From this initial derivation, quality, looking at the nature of things, such as an education programme, seems to be an appropriate type of enquiry.

In the common usage of the term ‘quality’, issues and definitions have emerged using phrases such as ‘right first time’ or ‘fit for purpose’, carrying not only a value judgement but a positive value judgement. This is evident in advertising and promotional claims where a ‘quality product’ is, by accepted definition, an attractive one. This notion of quality underpins much of the literature and practice. However, in self evaluation and in the development of this study, the more basic and literal view of quality re-emerges. The approach to quality is one of enquiry and reflection on the nature of the object or the service (see section 3.7.2). This subtle distinction is important when considering the nature of PIs

and QIs. QIs are by their nature reflective, based on enquiry, and may not be inherently value laden until that value judgement is made by a person. PIs, by contrast, look at performance, normally linked with measurable goals, where a 'better' score would be generally recognisable and agreed. This is evidenced by the common use of the phrase "improved PIs" within reporting documents.

2.7.2 The concept of 'indicators'

'Indicators' as an idea is used widely within the literature, and often carries a range of meanings. An absolute definition is not adopted in the literature, although the Organisation for Economic Co-operation and Development (OECD) have developed a description within their project on the Institutional Management of Higher Education project that captures the common usage. Within this work, PIs were outlined as numerical values which can be described in different ways (Cave et al 1988). This simplistic approach is echoed in much of the literature, although varying distinctions are often made about 'types' of indicators such as those made by Cave (1988) covering "simple indicators, general indicators and performance indicators" (p.17).

The move toward using indicators in education was not universally welcome, and had its root in policy development and funding. The Committee for Vice Chancellors and Principals (CVCP) reacted to growing government concerns in the mid eighties, and established a sub committee under the direction of Professor Jarret looking at efficiency studies. Although concentrating on Universities, this work had an impact in both the FE and schools sectors. This committee determined that PIs should be developed for a range of functions (Johnes and Taylor 1990). This move was essentially linked to political accountability, yet the recommendations led to the consideration of indicators for a wide variety of functions. This was seen by many as undermining peer review as a methodology. Indeed, the committee later entered the debate about whether peer review itself could be subsumed as a PI, but this was not conclusive at the time.

2.7.3 The concept of 'evaluation'

This concept, not unique to education, has found a stronger place in developing professional practice since the pioneering work of Donald Schon on the reflective practitioner (Schon, 1983). He developed an approach to reflective practice that was not context specific, and that required the evaluation of practice. This established a place for evaluation in professional development and quality enhancement that had been previously the domain of empirical practice and objective scientific research. This work was welcomed in many professional areas as characterised by practitioners such as William Reid (Shaw, 1994). He viewed the contribution of evaluative work as a useful mechanism to overcome difficulties such as the ethical problems and difficulties of objectivity in research aimed at improving social work practice.

In the context of education, Eisner looks at reflective enquiry and evaluation as a mechanism for supporting professional practice (1991). In an inspiring work, he introduces the notion of 'educational connoisseurship', an idea suggesting that using all senses and feelings to appreciate and evaluate practice and its impact is a helpful way of judging and changing practice. This takes the notion of evaluation to a very personal level, and accepts subjectivity as not only acceptable, but also a positive contribution. This notion appears to be intellectually sound, as evaluation (and the notion of value judgements as a central element of evaluation) can only be rooted in the personal and subjective. An idea or an object can only have 'value' or importance to someone. This contrasts with a measurement or indicator which may have a numerical rating, that rating being measurable objectively.

This notion of evaluation links with the earlier description of quality to underline the case that the more subjective view of the key concepts (as characterised by QIs) is supported in the literature. In addition, the more objective view of quality and evaluation (as characterised by PIs) also has a place, that place being to inform and support the evaluative judgements made.

2.7.4 Working definitions

It is important to note that there are no universally adopted definitions of the key concepts outlined here, hence these working definitions below serve for clarification of the terms used in this study only.

“Performance Indicators” - statistical measures which are applied within an institution to reflect the extent of performance in one area of work. Each PI used within this study has a specific definition of its own, as determined by the Scottish Office in “Measuring Up” (SOEID 1990) (see section 2.2.1).

“Quality Indicators” – narrative descriptions which provide characteristics allowing structured judgements (rather than numerical values) of the extent of performance in one area of work.

“Benchmarks” – statistical measures that are applied across the sector to reflect the measured extent of performance in one area of work. Specific benchmarks are defined in the same terms as PIs, but are statistical norms not ascribed to any one specific institution.

“Benchmarking” is using a process where PIs or national benchmarks are used for comparison to underpin quality improvement activities.

Key points arising from section 2.7

- The concepts of “quality”, “indicators” and “evaluation” are explored and considered.
- The terms “performance indicator”, “quality indicator”, “benchmark” and “benchmarking” are defined specifically for this study.

3 Research design, methodology and context

3.1 Research design

The process of developing an appropriate research design for this study was challenging. The study had a clear starting point and clear purpose (see section 2.2) that is "...is to seek and support enhancement and greater impact by improving the current self evaluation model and extending the current self evaluation model". With this in mind some key observations and decisions required consideration before the process developed.

3.1.1 What is clear in planning the research

It would be naive to assume an entirely blank canvass when developing a study for a professional doctorate. Any profession has established practices, models of working, values and ethical beliefs that are likely to provide a backdrop for the study. Authors such as Miller and Dingwall recognise this, and take this view even further to suggest that organisational and institutional settings themselves provide a distinctive and structured perspective for observing and researching upon professional communities (1997).

It is also clear that, as a social researcher working in the context of a professional community, the author brings experiences, values, perspectives and beliefs to the work. This should be considered in the planning of any approach.

3.1.2 What general approaches are likely to be helpful

This study aimed to address fairly specific research questions, with a clear common purpose. One approach that would have merited consideration was the traditional/experimental approach. This approach has an established track record in physical sciences and a strong philosophical base. This paradigm is often built upon having a testable hypothesis and the researcher adopting an objective and systematic approach to the work. This approach fits well where comparison through measurement is a feature of the work and a limited number of variables

are in place. This work is highly appropriate in the realm of quantitative research where variables can be measured with clarity and precision.

The traditional/experimental approach is not strong in progressing thinking where there are central issues that are subjective, such as values and beliefs. It is also least useful where the process rather than the outcomes of an activity are the focus of the work. In this traditional/experimental approach, work should be repeatable, however, unique, complex and social situations do not always fit well with this philosophy.

A case study approach is broadly more qualitative in nature and may help illuminate an issue. It has the advantage of a focussed and in depth examination of a situation. It can help describe, explain or illustrate a situation. In case study work, the participant's view can be considered more fully and complex relationships can more readily be explored. However, case study work can often be very specific and limited in scope. For this study, looking at, for example, one college through case study would run a risk of not being appropriate for wider generalisation. The ability to generalise in this work is central and avoiding a participant's view that work only applies to urban colleges, large colleges or any other grouping is important in selecting an appropriate approach.

In this study, there are many complex interacting variables to be considered. In addition, the work is neither theory building nor theory testing in its purest form, and no hypothesis is postulated. These characteristics and others indicate that the work sits in the arena of qualitative research. Indeed, in looking at a commonly used definition of qualitative research, it resonates clearly with the purpose of the work.

Qualitative research is an enquiry process of understanding based on the methodological traditions of enquiry that explore a social or human problem. The researcher builds a complex, holistic picture, analyzes

words, reports detailed views of informants, and conducts the study in a natural setting.

(Cresswell 1998 p.15)

Given that the work looks at a problem involving attitudes, beliefs and practices, the topic should be 'explored' not answered. This study builds a complex model of practice, explores the "human problem" of application (see above) and works in a "natural" professional setting. It is clear that qualitative enquiry of some type is likely to reap greatest benefits.

Case study is less appropriate because of the difficulty in drawing general and wide conclusions from any one particular situation. In addition, certain elements of the work should be appropriately approached in a more objective and systematic way. For example, structure and rigour in testing college applications of definition is, in a way, an objective and systematic enquiry. It requires routine and repeatable steps, comparing identical inputs (scenarios) and looking at the outputs (answers). Case study does not readily lend itself to this type of 'sub enquiry', picking up specific strands of enquiry within a wider context.

Action research is an approach that may accommodate the different tensions and needs of the study. It is qualitative in nature, and deals with social and organisational contexts. It requires the work to be progressed in iterative cycles, and improvements and changes are applied in practical work situations. A number of authors are sceptical about the value of action research and question the underpinning philosophy. From the literature, two main themes appear in the criticisms. The first is the general view that the ad hoc nature of temporary methodologies and frameworks within each cycle is in some way of poor academic quality. A second is that the role of the researcher being involved in the work detracts from the value of the work, or in some way inappropriately distorts the findings.

The emic and etic debate is where the tensions of objective researcher and subjective participant is also resolved through looking at the purpose of the work. A professional working within an established professional community is conducting the study. It is clear that the perspective of active practitioner cannot be excluded from the work and the implications of this perspective should be recognised and accepted. In essence, this work is developed from the emic perspective, with an insider's viewpoint being broadly applied to the study.

Key points arising from section 3.1

- The research design needs to take account of the established professional context of Scottish FE.
- A number of approaches to the study have been considered.
- The work is clearly qualitative in nature.

In terms of the research objectives, this section raises the following issues.

- There are a variety of options for enquiry and the selection of enquiry approaches are based around a personal judgement.
- The recognition of the subjectivity involved in this enquiry will influence not only the approach, but also the interpretation of information and results.

3.2 Establishing the structure for the research design

The area of research is inhabited with a sophisticated vocabulary that does not lend itself to simple explanations. However, using a simple version of the model developed by Creswell, the research design is considered in three stages (1998). This model is similar to the ideas developed by others such as Denzin and Lincoln and tries to bring clarity to the process of design, similar to the clarity often found in more traditional empirical studies (1998). Using this model, there are three stages. In the first stage, the general approach is outlined. In the second, problematic issues are explored such as how to link the literature. In the third, the actual format and methodology are outlined. These stages are now described in more detail.

3.2.3 First stage of research design: the general approach

In the first phase of this design process, the general approach is outlined taking account of ideas such as might be described in terms of the paradigm, framework, context, theory, or ontology. The framework and context of the study includes the professional context of FE, the notion of qualitative research, the starting point of current standards and practices that provide a base for the study. The study is also being supported by a practitioner who is interactive in the field and interacts consistently with the other professional actors. This role of “bricoleur” or ‘other’ has an impact on the context, “...the bricoleur produces a bricolage [tapestry], that is, a pieced together, close knit set of practices that provide solutions to a problem in a concrete situation” (Denzin & Lincoln, 1998, p.3). The object of the study involves a complex and interactive quality standard, where social interpretations of value and worth play a key role. This framework points in the general direction of a qualitative study, planning an approach that will take account of this complex and mature professional context.

3.2.4 Second stage of research design: issues that determine or influence methodology

In the second stage, the methodology and the related issues that inform methodology are the focus of attention. There are several key issues that require consideration to determine the appropriate research design. These include the iterative nature of the work, the place of the literature, the place of comparative studies and the complex link between the work improving the current model and the work extending the current model. Each of these is examined here in more detail.

The work will be iterative, with a progressive focus on the evidence, decisions, conclusions and artefacts that inform and support changed practice. The purpose of the study and the nature of the questions made it difficult to plan the whole study in a detailed way prior to the feedback within certain stages. Researchers such as Smith increasingly recognise the untidy nature of research, and the difficulties in qualitative research of determining the detailed steps in advance of the work (1975).

The place of the literature is not as clear as it would be in a traditional empirical study. The literature in this work will not only be there to inform the researcher, but also to inform the participants. The literature is there primarily to bring an external perspective to the work, and promote informed reflection. This model has been developed as a concept known as “cogenerative learning”.

The cogenerative learning model is applied within the study. When the literature review was conducted, the material was circulated to college staff through structured workshops/seminars and inputs (as exemplified in appendix H). This also included direct input and discussion with people from other sectors (such as Paisley University) and other countries (such as Miami Dade College). The

direct input and input from the findings of the study were fed to the participants within each cycle to support their reflections, inputs and decisions.

This idea, described in great detail by authors such as Greenwood and Levin, is an essential element of this study (1998). This links with the notion of the “bricoleur” or ‘friendly outsider’ providing support and information. This view was summed up by as follows –

Good professional action researchers achieve a balance of critique and support through a variety of actions, including direct feedback, written reflections, pointing to comparable cases, and citing cases from the professional literature where similar problems, opportunities or processes have occurred.

(Greenwood & Levin, 1998, p.104)

The place of comparative studies can also be considered using a similar viewpoint. Comparative studies, looking at other countries or other sectors, may illuminate new perspectives. It should also support reflection and critical comparison. This reflective process, extending the perspectives, will add to the ideas and options considered when looking for changes and improvements in the model. In a similar way to the literature, these comparisons are not useful to find a correct answer or better model, but to stimulate reflection and thought in the researcher and the practitioners involved in the work.

The complex link between the improvement and the extension of the current model stems from the purpose of the study, which has been broadly determined within the professional context. The key agencies and groupings in Scottish FE have all sought the improvement and extension of the model, this being explicit within SFEFC statements. Both the improvement and the extension have common elements of work in their nature, their methodology, the underpinning comparative studies and their outcomes. Looking at these individually can clarify the link.

The link in this work is widely recognised within the professional context, is the subject of many FEQIF discussions, and is outlined within the SFEFC Circulars providing guidance to colleges. SFEFC Circular 58/00 sums this up clearly when it states –

One element of this strategy referred to an intention to provide closer linkage between college developments in ICT, and broader developments on quality, such as the Council's current consultation on college quality improvement strategies and the references to the use of ICT within the Council's Management Review. (SFEFC Circular 58/00 annexe A, 2000, p.2)

The intention to link improvement in ICT support with current developments on quality is clear, indeed, the link itself is not co-incidental, but central to the thinking. The idea of using similar standards and cyclical review is central to the quality improvement work in colleges.

The nature of the quality improvement work is based around an annual self evaluation cycle using a prescribed set of national standards. The methodology adopted in developing a quality improvement model involves taking a current model and progressively improving it through reflection and feedback. The enhancement of the current standards and the extension to include ICT standards both require information and perspectives from other countries or other sectors to introduce new ideas to inform practice. The outcomes from both elements will be an improved structure for self evaluation in colleges. These ideas suggest that the work is one study having a central core of research, with two strands working on iterations of refinement in two parallel activities.

3.2.5 Third stage in research design: format and research style

The third stage in planning covers the format and methodology used. A number of approaches should be considered in helping to progress this work. Having already determined the work as having the characteristics of a qualitative study,

a few options can be considered. Some options on a research style that might illuminate and progress this work would include experimental, ethnographic, case study and action research.

Experimental analysis is relatively rare in qualitative work. It requires an ability to control variables and is at its best where there are few variables. In this study, there is no right or wrong answer and no objective truth or hypothesis, the work is concentrating on views, perceptions, beliefs and practices. The experimental style of work can often produce data or facts, but this is a long way away from knowledge or understanding, which are central to this work. Experimental work has the advantage of being rational and objective and will often be precise in nature. It may also be helpful in illuminating causal relationships. In general, it is possible that small elements of this work might be supported through this style of research, but it very unlikely to offer any major contribution to the work.

Ethnographic studies involve integration with and observation of the group. They have a tradition of illuminating social situations, looking at behaviour within groups. This style can often provide fresh perspectives and insights into what is often taken for granted. However, for this insight to be useful, the social dynamics need to be the central focus of the study. In this study, the managed process of self evaluation, although influenced by social dynamics, is primarily delivered through a pre-determined procedure. The work is not primarily social in nature, and behaviours are constrained by professional practice. This style of enquiry is therefore unlikely to offer appropriate insights.

Case study work looking in a systematic way at group activity has a long established track record of illuminating practice. This style can look in detail at processes and relationships. Case studies, however, can be more complex and less focussed if a range of groups is used. In addition, case study work is not well suited to making iterative steps in developing practice across a sector. Case study research is intended to illuminate rather than directly inform and change

practice. Case study work could have been an option in the project, but did not appear to fit as well as action research.

Action research is a relatively new style and it can be built upon elements of case study or survey work. It involves cycles of action and reflection to review and improve practice. There are many models of action research that can be adjusted to match the problem in hand. The philosophy behind action research is one that engenders ownership of change. In addition, action research allows the adoption of smaller elements of other methodologies to be used within the action and reflection cycle. These characteristics of iterative improvement, embracing other methodologies, and maximising ownership provide a strong case for this being the best fit style for this study.

Key point arising from section 3.2

- The research design should be considered in the context of the general approach, the problematic issues and the actual format of the research.
- A number of approaches were considered in terms of being suitable for the study.
- The study would best be approached through action research.

In terms of the research objectives, this section raises the following issues.

- In putting a structure in place to clarify the planning of the enquiry, there is a clarity of thought which will help to reflect at a later stage whether the design of the research is appropriate and robust.
- The adoption of action research is a significant recognition not only of the approach, but also of the fact that change in professional practice is central to evaluating the success of this study.

3.3 Overarching approach and methodology

Given the earlier considerations, the appropriate research approach to be adopted was considered to be action research. In looking at this approach, it is helpful to give fuller consideration to the background and development of the approach, and to understand the consequences of adopting this style of work. In addition, a more precise description of this approach and the methodology, which has many variations, would clarify the process adopted within the study.

3.3.1 The background and development of action research

The field of quantitative research has a long established tradition, and indeed, philosophy. It can be traced back to eminent thinkers such as Descartes. Centuries of developing mathematical and scientific thinking established a literature and research style that was not seriously challenged until the early 1940s. Kurt Lewin is widely credited as founding the action research model. Lewin initially had a central focus on social research and his approach is linked philosophically with the thinking of the staff of the Tavistock Institute of Human Relations. It is important to note that action research was not only regarded as a new practice in research, but also regarded as having a completely different underpinning philosophy. This paradigm shift is important in recognising the value of studies such as this.

Action research has developed not only as a method of research enquiry. It is widely viewed as an educative model, a way for individuals and communities to learn and change. In this way it competes with traditional models of education, being a model adopted for professional development in some settings. The philosophy behind action research is similar to that of self evaluation. This philosophy, based on the work of Schon and others, makes action research a more appropriate approach to apply.

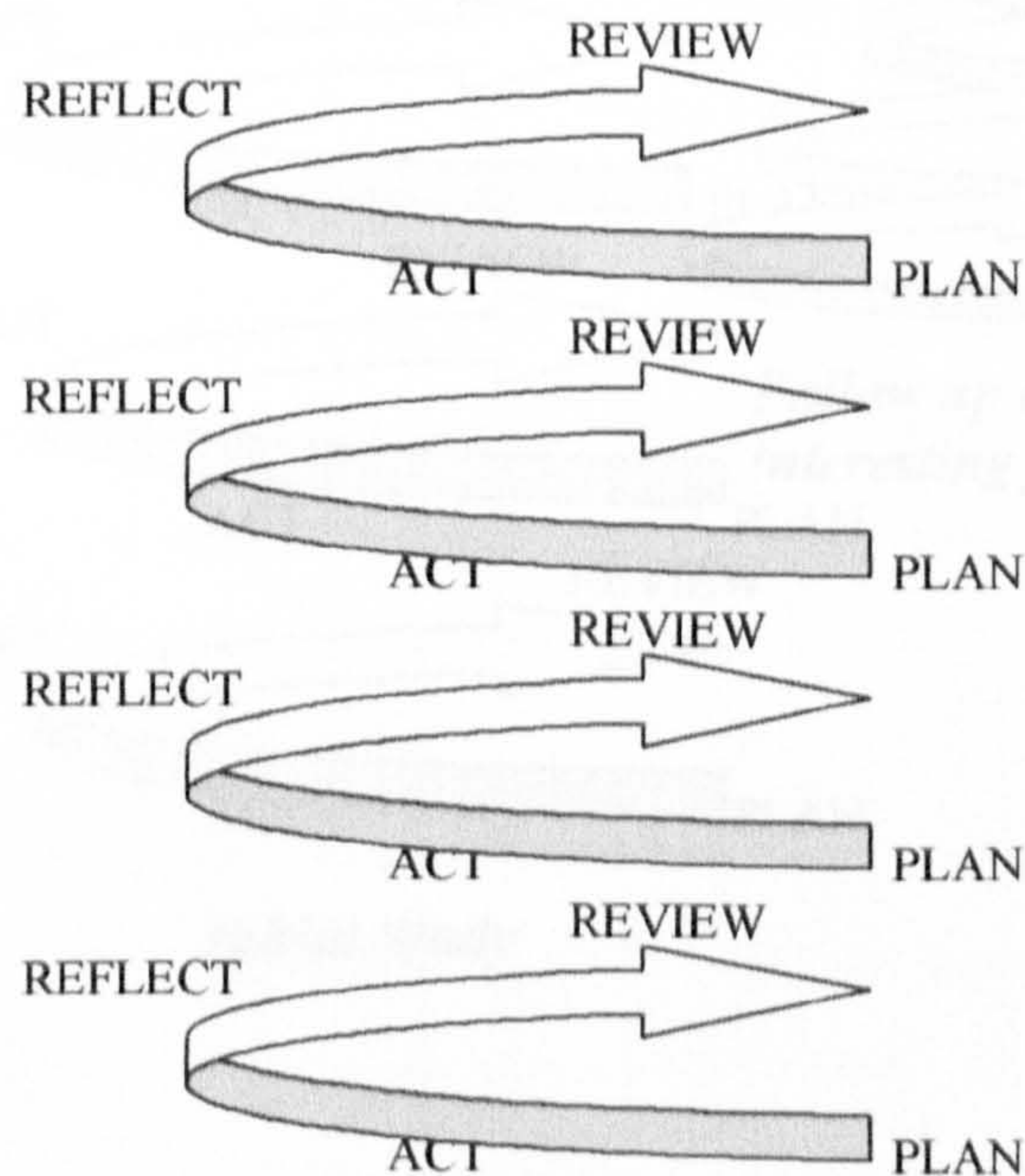
3.3.2 Action research defined

Action research is not a methodology that lends itself to absolute definition, as many variants of action research are used. In spite of this, there are a number of

useful definitions established in the field. “AR [action research] is social research carried out by a team encompassing a professional action researcher and members of an organisation or community seeking to improve their situation” (Greenwood & Levin, 1998, p.4). Other definitions bring in concepts such as self reflective enquiry and the notion that action research can embrace other research practices within the model.

At the heart of action research is Lewins idea of a cycle of planning, acting, observing and reflecting. This is refined in the work of others such as McNiff (1988) to be described as a plan, act, reflect review cycle. This is a cycle repeated working toward a greater understanding and/or improved practice. This is often represented by leading authors such as McNiff as an upward spiral, and is represented in diagram 2.

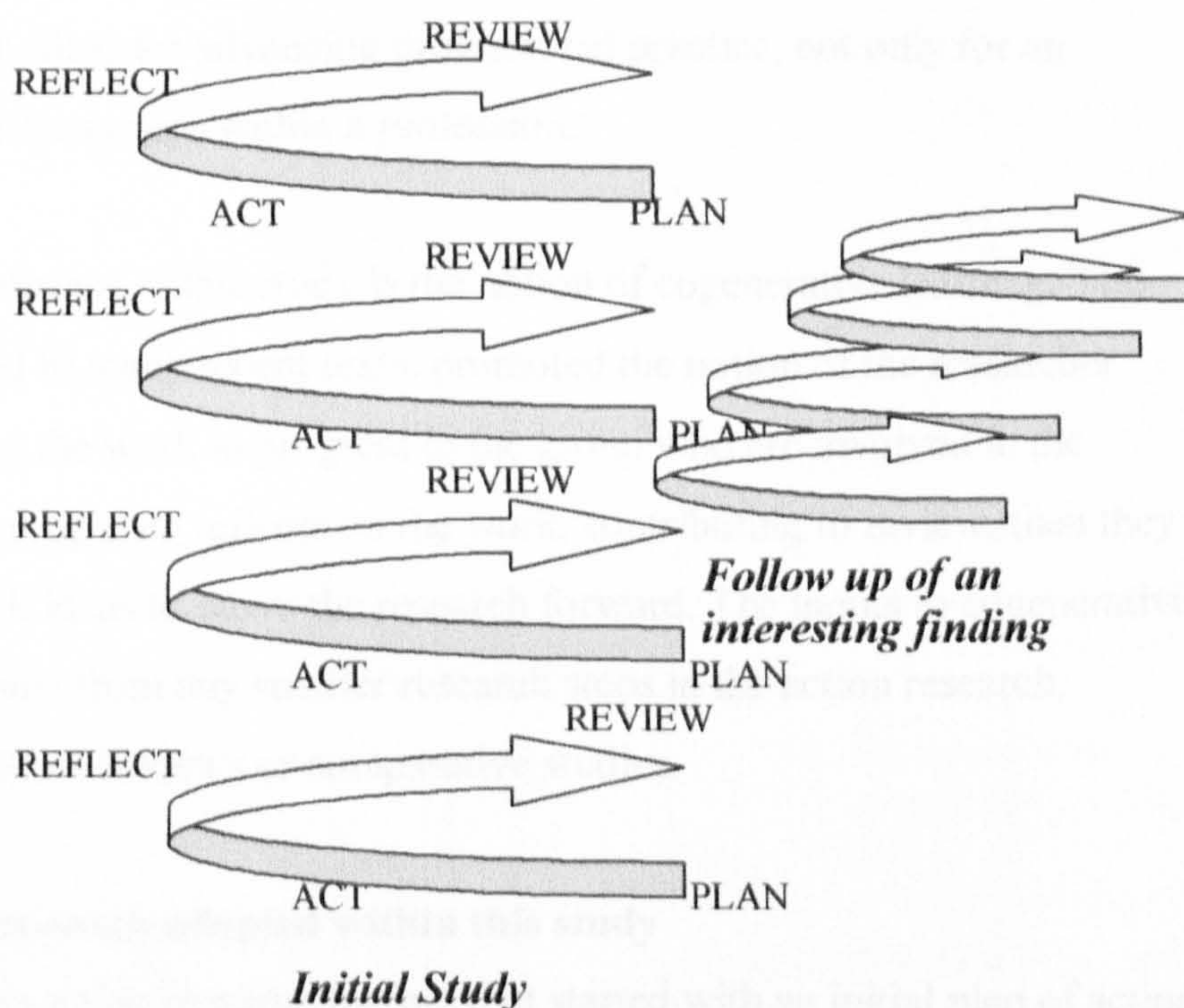
Diagram 2



This cycle defines the classic action research model.

There are a number of variations on this model. McNiff exemplifies work starting as one spiral, and then reflections suggest a second related issue may arise, and another spiral comes off from the main path of the study. This is illustrated in diagram 3. This second strand will contribute to the findings of the research if it is following the same direction and purpose, and is linked to or based upon earlier findings or issues stemming from the earlier stages of the work.

Diagram 3



This notion of an initial plan getting less tidy is one which is acceptable within action research. As this research aims to illuminate and progress rather than provide specific answers, this flexible model is not only an acceptable one, but an appropriate one. There are many examples available of models involving many spirals linked by the common bond of the central purpose of the work. It is

this bond of a common central purpose and direction which is central in determining what rests within the scope of one study. Another variation of this is to have smaller iterative stages within one spiral, where several activities contribute to the reflective process. This could be for example, a questionnaire activity and a focus group to establish views.

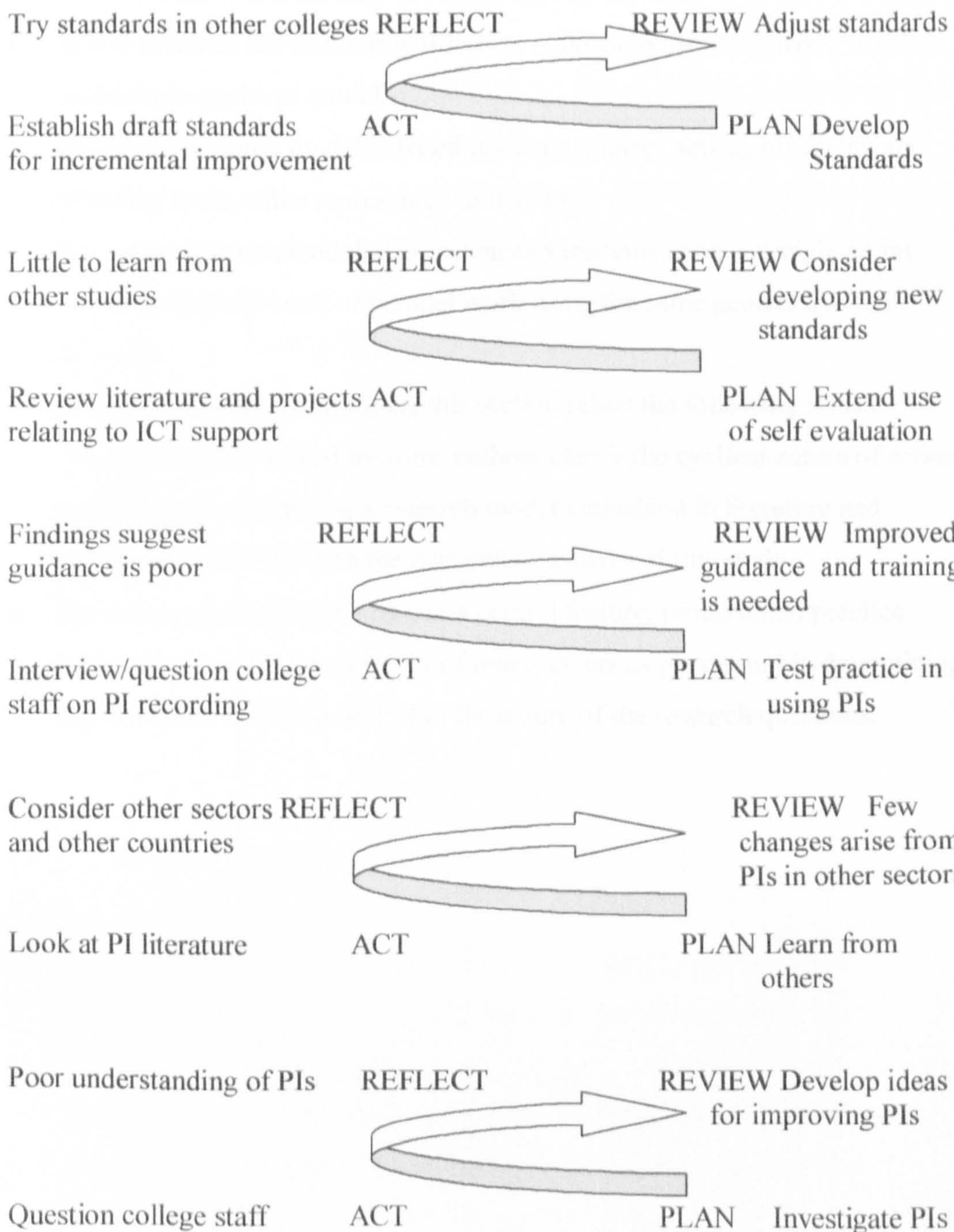
Another key feature of the plan, act, observe and reflect cycle is the notion that the act or reflect steps can embrace other research activities. For example, an act may involve a small case study, or the reflection may involve a focus group discussion of findings. Indeed, one of the spiral cycles may involve a literature review and consideration of its implications. This feature of the action research model makes it ideal for advancing professional practice, not only for an individual, but for groups within a profession.

Central in the design of this study is the notion of cogenerative learning. This idea, developed in many recent texts, promoted the notion of the researcher communicating the work in progress to the group who are involved in the enquiry. The group then reflects on the work, contributing to review, then they would feedback ideas to move the research forward. The inputs to cogenerative activity can come from any smaller research steps in the action research, including literature reviews or comparative studies.

3.3.3 The approach adopted within this study

This study is an action research project that started with an initial plan of action, and was iterative in nature. As each step was taken, a clearer specification developed for the next loop in the spiral of enquiry. The major steps in this study are outlined within diagram 4. Within each loop lie a number of smaller steps adopting a range of specific research practices to feed the review cycle. This outline approach was clear at the outset of the study, but the smaller steps within each spiral were developed with greater clarity as the findings of each previous cycle emerged.

Diagram 4



Key points arising from section 3.3

- Action research was initially developed by Lewin in the 1940s.
- Action research has an entirely different philosophy from the more established empirical model.
- The action research model is based upon a planning, acting, observing and reflecting cycle, often represented as a spiral.
- The action research model also embraces variations upon a straight spiral, including spin off work or parallel work using the same general cyclical approach.

In terms of the research objectives, this section raises the following issues.

- The approaches outlined by some authors clarify the cyclical nature of action research, and are offering a research model embedded in literature and practice that fits well with the research objectives of this study.
- The action research model has, as a central feature, professional practice enhancement and the judgement of practitioners as paramount in determining improvement: these are central to the nature of the research questions.

3.4 Methodology

The practicality of conducting action research as an approach over a period of time has a major impact on the choice of methodologies. This study is more than following a step-by-step series of repeated actions in a cycle, it required a wide range of investigative steps as the work developed. As with most action research, the major approaches were determined in advance of the activity, but occasionally changed or enhanced where the approach did not give a complete answer. In addition, some piloting of approaches also led to feedback suggesting alternatives should be considered. The underlying rationale in developing vocational practice is to ensure that qualitative findings are both academically robust and compelling to practitioners, and that, as far as possible, there is ownership and adoption of findings.

For clarity the methodologies for each of the phases was examined separately, using the phases outlined in diagram 1. Each phase had a different focus, and the methodology reflected the specific focus.

3.4.1 The key questions and challenges for this study

The key questions for this study are -

1. Are the current performance indicators understood by college staff?
2. Are the current performance indicators used effectively in Further Education?
3. What improvements can be made in the use of performance indicators?
4. What can the literature tell us about developing quality standards for IT support?
5. Can useful quality improvement mechanisms for IT support standards be modelled, developed and tested?

In addition, the study intends to develop training and support materials to support the FE colleges in dealing with deficiencies and extending the benefits

of good practice. This requires that methodologies selected are: academically valid, reliable and robust; applied with due sensitivity not only to address confidentiality, but to be careful of status and ownership issues; believed to be convincing by practitioners, and applicable in a professional setting.

3.4.2 Methodologies for phase 1

Phase 1 aimed to examine whether the PI definitions were widely known, uniformly applied over time, uniformly applied within an institution and uniformly applied across institutions. In addition, the beliefs of staff regarding the reliability of the data that others collect was needed if any proposed solutions were to be credible (whether those beliefs were well founded or not). To support this, views of expert or established practitioners were required to help determine the priorities of further follow up work.

In addition to these information requirements, the approach undertaken had also a practical requirement to be efficient of contributors' time (given that they are to be asked for their contributions several times in the course of the study). As the study had a high profile with strong potential for adoption as a national approach for FE, it was also important that the sample sizes and profile (in any testing or consultation activity) be large scale, fully representative and compelling.

Given these requirements, a group of project staff from SFEU and the Scottish Qualifications Authority (SQA), all expert in college functioning and management, were brought together and asked to advise on the selection of sample colleges. They were asked to list the variables in college profiles to ensure that the sample chosen reasonably represented the important variables that were likely to impact on effective PI collection. This process was conducted prior to the sample colleges being determined.

The group, working as a focus group, came up with the following: -

- Large/small *Represented by student count or income as proxy measures.*
- Rurality/urbanity *Represented by typical travelling distance of students.*
- Monotech/community *Represented by range of curriculum delivered.*
- Hi/low “tech” administration *Represented by the technical profile of data collection.*
- Full-time/part-time students *Represented by recorded mode of student attendance.*

In addition, the group felt that if the evidence were to be compelling, a sample size of 20% of colleges would be an acceptable size. The group understood that this was likely to be a large scale information base that would be widely accepted and believed to be accurate, and would allow the findings to be confidently generalised. This would mean a minimum of 9 colleges from 46.

All colleges were invited to send a senior manager responsible for quality to a launch event where the study was described in outline, and their views sought (in focus groups as part of the day) on priorities regarding implementation of findings and issues needing to be tested or addressed. At this event, colleges were also asked to go back and consider volunteering to take part in the study. A total of twelve colleges volunteered to take part. When matched to the profile, a set of colleges were selected to fairly represent the variables identified in broadly the same proportions in the sample as they are in the sector. Of the three “extra” colleges, two were used to pilot the interview and questionnaire method, and one (owing to college staffing changes) was not deemed suitable and by mutual agreement, withdrawn from the study.

Based on the feedback from this launch event, a set of questions were designed to be applied within a set of structured interviews. The interviews would, as far as was practical, check that the responses given by managers, administrative staff and teaching staff were consistent. This form of confirmation and triangulation was appropriate to test knowledge, beliefs and practices. Similar questions were used with all three groups with some minor variations where tasks were limited to only one of the roles (see appendix C).

This structured interview approach was piloted, and broadly seemed to be exploring the right issues. However, the feedback given, language used, and comments made outwith the formal interview suggested that there may be subtle interpretations of instructions and good intentioned plans to “clean up” the data that could be causing a difficulty. For example, where staff in the pilot all consistently know what was meant by a ‘student enrolment’ (the precise definition), they often held back information on enrolments from administrative staff to minimise costs (paid by the college to SQA) where students were likely to withdraw. There was a belief that this was not a “true enrolment” as the student did not stay. An inconsistency such as this could create large distortions, so a methodology to test this had to be developed and applied.

To deal with this an approach similar to academic testing was developed to check understanding and beliefs. Scenarios were developed (see appendix D) and staff were asked to examine the situations described, and to report how they would record the PIs that would come from the scenario. This was subject to further piloting and was indeed found to be an excellent method of examining the blend of knowledge and beliefs that underpinned their actual recording behaviour.

3.4.3 Methodologies for phases 2 and 3

Phase 2 took the findings of the initial research and testing, and applied that research to improve the self evaluation model through creating guidance on

generating more robust PI and benchmarking information. The methodology used here is substantially built upon the approaches and findings of phase 1. In addition to the user feedback, desk research on trends and influences that may impact the collection of PIs (notably the impending introduction of Higher Still) was used to inform the revisions. The findings for phase 1 were taken and developed into a revised set of PI definitions, referred to as a “starter set” (see appendix E).

This revised model was then put, using the Delphi method, to a number of focus groups. Feedback was sought on the appropriateness and applicability of changes, and on the detail of further development work proposed. The focus groups in this phase included senior managers responsible for quality in 70% of colleges. 30 managers working in three groups gave qualitative feedback through discussion and agreement on the options. The decision was taken to simply seek open ended feedback on options, as the benefits of a wider and more unbridled response was likely to generate a stronger response, encompassing attitudes and beliefs as well as facts. This was important to confirm the credibility of the models proposed. (This revised “starter set” of PIs was later released formally by the SFEFC to be used as the PI definitions for the sector).

3.4.4 Methodologies for phase 4

The methodology adopted within broader work on developing ICT standards is rooted in the Delphi method. This approach, initially designed by the Rand Corporation to synthesise expert opinion on national defence problems, is a structured way of pulling together group views. Where the research will use group views (and a number of iterations developing these views) structured questions and discussion rather than written questionnaire responses will feature in the feedback process. The Delphi method was designed with the underlying assumption that mailing was the most practical way to bring national expert views together. The research being conducted here allows direct meetings and interaction, giving a more dynamic form of developing a view.

The Nominal Group Technique developed by Delbecq (1986) was designed with participants initially writing a view, with talking within the group being prohibited outwith specific stages in the process. This is a well-established methodology, with a clear procedure and sound evidence on the successful elements of the technique. The stages in this process are:

1. the silent generation of ideas;
2. round robin sharing of ideas;
3. feedback to the group;
4. explanatory group discussion;
5. individual re-assessment; and
6. mathematical aggregation of the revised judgements.

The six stages do bring a rigour to the process that has a value in the clarity of decision making. Debold (2002), in reviewing this method, proposes three principles why the nominal group technique is successful. Firstly, holding items for evaluation after collecting a range of ideas and allowing a period for consideration increases creative solutions. Secondly, in estimating numerical values, contributors refine and reflect on their values after listening to the contributions of others. Finally, generating ideas individually leads to a greater number and more creative ideas.

This rigid approach was rejected for this study as creativity and the number of solutions was not a priority. The positive development of ideas through interaction brings a positive and developmental aspect to refining a model. The fact that a model was available to refine rather than developing a totally new model from the outset was central to the selection and adaptation of the methodology. However, some characteristics of the nominal group technique were used, primarily in asking participants to bring prepared and written ideas to the meeting, and to review ideas as a group once they were all shared.

The various elements of methodology considered in isolation do not fully describe this complex and interactive array of strands of inquiry. Often methodology is described by the literature in discreet and clear categories (Leedy, 1997). The approach adopted in this study was primarily an action research approach, with additional elements of methodology applied within each stage. This action research approach often relies on feedback through focus groups, not only for facts and views, but also to help determine following methodology. Focus groups are a well-established methodology as described by authors such as Krueger (1998). They are often perceived as less scientific and structured in their approach, as they feature highly in market research. However, structured questions and systematic feedback are central elements of this research, supporting a more robust action research model.

Key points arising from section 3.4

- Methods adopted had to balance rigour and the need for open ended qualitative discussion.
- Attitudes to the work, beliefs, and credibility had to be considered when deciding on methodology.
- The key methodology in the fieldwork is a variation of the Delphi method, using input from a range of experienced practitioners.
- The nominal group technique, selectively changed, was a central methodology in working with IT groups.

In terms of the research objectives, this section raises the following issues.

- Within the action research approach, a set of appropriate methods suitable for each enquiry cycle and research question had to be selected.
- The methods had to take into account the often personal and subjective ways of practitioners judging improved professional practice.
- The methods chosen, where often personal and subjective in their nature, are consistent with the general approach adopted.

3.5 Recent sector treatment of the topic

In the previous section the professional relevance of the study was outlined, and initial ideas on research design were considered. In addition, the key concepts for this work were defined. This section will reflect upon FE sector views underpinning the related concepts and work in the area of quality.

Benchmarks and PIs have not been a 'live' concern in FE until relatively recently, notably the last five years. In essence, they have not been extensively used in the development of quality, but rather reported as providing a historic or general picture of the sectors performance. They have been used for reporting (without great confidence in their reliability) within college annual reports, and some PI information is used in a limited way in setting objectives within some college development plans. However, even where there are serious concerns over the financial health, capability of management, performance in curriculum areas and delivery of mission (such as there was in Reid Kerr College in 1998) there is no evidence that PIs were used as a warning or indicator of quality.

PIs are used within the inspection process to help HMI make evidenced judgements over the quality of delivery of sections within a college. These judgements are made within a framework where there is some limited questioning of the accuracy of the information presented and the PIs only provide part of the evidence for judgements.

Self evaluation in colleges (introduced in 1997) to give best results, relies on PIs providing a valid and reliable information base to compare, measure improvement or identify good practice. As self evaluation becomes embedded in college practice, more importance and value is placed on accuracy in PI information.

Key points arising from section 3.5

- **Benchmarking and the use of PIs have not been a major area of attention until the relatively recent introduction of self evaluation.**

In terms of the research objectives, this section raises the following issues.

- **There is an expectation in the Scottish FE sector that the practice relating to PIs is, in some sense, immature and ready for investigation and improvement.**
- **The key bodies are likely to be co-operative in further enquiry and to act on any findings.**
- **The broad acceptance of self evaluation and the philosophy of reflective practice will make the action research approach a more readily accepted style of enquiry.**

3.6 Perspectives of key agencies

The key agencies involved in the support and development of quality were:

- the 46 incorporated colleges;
- SFEU;
- SFEFC;
- HMI; and
- Scottish Enterprise/Highlands and Islands Enterprise.

3.6.1 The Colleges

The colleges are incorporated, autonomous, and, therefore, have a corporate approach regarding how they should deal with standards and quality improvement. There was also a confidence (evidenced within the FE Quality Improvement Forum response to consultation December 1999) that there were “... no deficit problems of quality...” and that “...quality standards are high within FE...” This view may have been based upon somewhat anecdotal evidence, as there is no college annual report or sector publication readily available that compares Scottish FE with any other public sector quality standards or the quality of FE in any other countries. Colleges found the five PIs difficult to collect and interpret with accuracy (based on the findings within this study). The general view on development, as represented in the FE Quality Improvement Forum, was that colleges do not use information effectively for improving quality, and this is the priority for future development.

3.6.2 SFEU

SFEU is the lead agency supporting the development of Scottish FE and its colleges as outlined in the SFEU mission statement. As a Non Departmental Public Body (or QUANGO as they are commonly known) there is a level of accountability to the Scottish Executive to support the development of FE. The main aspects of this work are technical advice, management development and support of government initiatives. This includes the support of quality and quality improvement. That support is manifest through publications, events and

training activities. SFEU interest is primarily about improving quality in the sector, and promoting the ethos of continuous improvement.

3.6.3 SFEFC

SFEFC has, within its remit, a requirement to ensure and promote quality. This is manifest through delegated responsibility from the Secretary of State for the “...adequate and appropriate provision of Further Education...” (Further and Higher Education Act 1992) as outlined in legislation. There is also an implied responsibility for quality through a need to monitor the effective disbursement of public funds. This links with the need for development planning for colleges, and the production of annual reports from colleges. The SFEFC responsibility for quality in general also includes the specific responsibility for quality assurance. This responsibility was discharged through a Service Level Agreement with HMI for the inspection and production of reports on colleges.

3.6.4 HMI

HMI have a Post-School Division who lead work with FE and Community Education. The reporting methodology is defined through the Service Level Agreement with SFEFC. There is also a responsibility for the collection of information to advise Ministers and to produce public information. The advice to Ministers tends to be responsive and often based on information already available to HMI. The collection of information for publication is led through the HMI Audit Unit. This Unit has funded and supported much of the initial work within this study.

3.6.5 Scottish Enterprise and Highlands and Islands Enterprise

Scottish Enterprise (SE) and Highland & Islands Enterprise (HIE) have an active interest in training, and in business development. There is a common agenda with these agencies and the colleges in the quality of training provided through FE given the 440,000 people who train in the FE system each year. SE and HIE initially supported and funded the work on the Scottish Quality Management

System (SQMS), the central quality standard used by FE and training organisations in the mid 1990s. Where there is no current active support for quality in FE, there is a clear area of common interest.

Key points arising from section 3.6

Key agency views can be summarised as follows:

- colleges believe there are few problems in the area of quality;
- SFEU seek to promote quality improvement;
- SFEFC has a legal responsibility for ensuring quality;
- HMI inspect and report upon quality; and
- SE and HIE have an interest in the quality of training in Scotland.

In terms of the research objectives, this section raises the following issues.

- The complex array of agencies with an active interest in this work indicates that an approach that involves partners and is viewed as rigorous in its approach is likely to be most appropriate.
- The specific research questions are likely to be of interest to most of these agencies.

3.7 Performance indicators and self evaluation in context

3.7.1 The quality systems in colleges

Each Scottish FE college has a unique approach to quality, although there are many similar elements and some of the externally driven standards are absolutely uniform. There is only one quality model that is absolutely uniform in its application, that is the SFEFC/HMI Quality Review model. It is a condition of public funding that colleges self evaluate using these review standards, and the colleges are subject to periodic inspection (every 4 years) using these standards.

HMI/SFEFC review standards are the standards used by HMI to review (previously 'inspect') quality of college provision. The standards are split into "Learning and Teaching" and "Management" standards. The standards are written primarily using "quality indicators"(see section 2.4) as the core building blocks of the quality structure. Where quality indicators(QIs) are central in this review model, there are clear guidance notes suggesting that PIs should also be used to provide evidence of performance.

Scottish Quality Management System (SQMS) is a "compliance standard" (audited, with an "achieved" or "not achieved" result) designed initially by SFEU for SE and HIE as a quality standard for all training provision. Audits are undertaken against 14 prescribed standards every three years. This standard is currently used by all FE colleges, but not covering all college areas or functions within each college. SQMS can be applied to certain areas of a college, this could be specific departments such as engineering, or limited to Enterprise Company funded courses. SQMS is audited externally by a commercial organisation (Babcock) on behalf of the Local Enterprise Companies.

Investors in People (IIP) is a compliance standard currently embraced by about 50% of all colleges. The focus is on training and communications. This is

audited fully every three years, with lighter visits and reviews at the mid-point of the three year period.

ISO9000 is an international quality standard used in five colleges currently. This standard was developed from BS5750, a standard designed to ensure quality procedures were being used by manufacturers working on government procurement contracts. This is a compliance standard subject to inspection annually.

Colleges generally design a quality manual and set of procedures that cover the range of requirements of all the relevant standards, external visits and audits related to management (rather than quality). This would include financial audit, SQA devolved centre status, devolved centre accreditation for other bodies (such as City & Guilds) and requirements of partnership agreements. In addition to compliance needs, colleges aim to adopt procedures that lead to quality improvement (in addition to quality monitoring). SFEU, HMI and SFEFC, who specifically seek evidence of quality improvement, have heavily promoted this idea.

3.7.2 Self evaluation and quality indicators

In college activity, there is a requirement to use the SFEFC/HMI review standards in the context of self evaluation. This self evaluation process aims to review practice using QIs. QIs are narrative descriptions of standards. These narrative descriptions are often 'value free' (see section 2.2.1). These narrative descriptions can often be informed through PI information, although it is often an inference based on a collection of PIs rather than one specific PI. QIs are emerging as the most popular method of determining quality standards. They are not the specific focus of this study, although are important in describing and determining standards. The relative merits of using PIs or QIs is of interest in the field, but outwith the determined scope of this study. It is, however, important to highlight one important difference, it is that PIs can be very tightly defined, and

will lead to a numerical measure of change. QIs often lead to a judgement of improvement, but not a specific measure. Given the research questions, this study should be focussed on PIs.

Self evaluation is intended to build on good practice as well as identify practices that are not up to the standard sought. Self evaluation is conducted at team (or department) level across the college, with one overall evaluation being conducted for all college management. A four level grading (unsatisfactory, fair, good and very good) is applied to all areas evaluated. This grading should help identify areas of weakness, trends over time, strengths and weaknesses across the college, and good practice.

3.7.3 The use of standards and PIs

Although the principal building blocks of self evaluation are QIs, early experience of college review highlighted the need for more objective information to allow gradings to be uniformly applied. This feedback came through HMI and colleges themselves. There were two approaches to dealing with this difficulty, the development of exemplars, and the further development of PIs. This study and the questions that are the focus of this study (see section 2.1) underpin work on the further development of PIs.

Although there is debate about the relative value and benefits of approaches that build on QIs rather than PIs, this study does not attempt to examine this. The approaches adopted within FE clearly require both, and the trend, generally, is toward the adoption of quality indicators. This study accepts this trend as appropriate, but aims to develop PIs that should help provide more robust evidence to judge quality objectively. Many other systems based on QIs (such as the system in use in Scottish schools) already have reasonably valid and reliable PIs, uniformly applied. This study should assist in getting these helpful points of information in place in a way that can be compared with confidence.

3.7.3 Clarifying the relationship between QIs and PIs

Where this study already describes both of these terms (see section 2.6) it will be helpful to clarify the main steps in developing written material to support practice within the context of this study. At the first and more strategic level, standards must be defined. Written standards will consist of a number of key statements which describe performance. Standards for an aspect of service, such as teaching and learning, will typically have four to eight overarching statements describing performance. Each of the standards will be judged through a set of related QIs. These QIs are statements about performance which lend themselves to a value judgement. To make a judgement about a QI, evidence must be collected and evaluated. PIs often form part of this evidence. They are useful evidence as they can often allow comparison over time or between activities.

PIs are not, of themselves, direct indicators of quality. PIs such as student retention rates are useful statistics, but in an evaluation process, this raw data must be interpreted in context and ascribed a value to reflect judgements such as “good” or “fair”. It is a common assumption that PIs taken alone can infer a qualitative judgement. This may stem from the view that they are objective, and that they are often used in the media in their raw form to imply a judged performance. However, it is important to recognise that the PI alone carries no judgement, and needs to be interpreted to be useful. The interpretation can often be complex, and may involve judgements that combine PIs. For example, QIs on attainment may involve evidence and judgement of PIs covering recruitment, retention and pass rates. The balance of the three statistics and the relative worth of each of those figures will inform an evaluative judgement, hence informing the QI.

The relationship can be summarised in this way, looking at the evaluation of professional practice. Evidence is collected to inform judgements, this evidence is likely to include PIs. Once this evidence is collected and judged for its relative value, it contributes to the judgement of performance reported at the level of QI.

A collection of QIs together will give a report based upon the published standard used for reporting.

Key points arising from section 3.7

- Colleges use SFEFC/HMI review standards, SQMS, IIP and other quality standards.
- PIs produce numerical measures and were the initial building block of self evaluation.
- QIs, although growing in use in the field of quality, are not the central subject of this study.

In terms of the research objectives, this section raises the following issues.

- There is, in professional practice, two broadly similar style of indicator, hence the decision to focus on one needs to be clear
- There is a risk of losing focus in this study should there be confusion between the place of PIs and the place of QIs in quality improvement, so it is appropriate to specify the focus in the research questions.

4 The Literature Review

4.1 Context of the literature review

The previous section examined the historical treatment of the key concepts. In doing this, it was clear that benchmarks and PIs have not been a major area of study or application until recent times. The development of self evaluation in Scottish FE has been actively supported by the author through a range of key national projects. The author's links with the key agencies are strong, and there is a uniform alignment of the key agencies to promote and develop the benefits of self evaluation. As part of this work, an examination of the literature is required to consider and test the underpinning thinking and to have a confidence that the model is robust and well founded, and that potential benefits of having a model of self evaluation underpinned by PIs are optimised.

This literature review is also essential to properly examine the second and third of the key questions in this study "Are the current performance indicators used effectively in Further Education?" and "What improvements can be made in the use of performance indicators?" (See section 2.1). The literature should provide insight and support theory building in this area. When added to the fieldwork (theory testing primarily) this should lead to insights and proposals for improved professional practice.

The literature was reviewed in a structured way with a broad look at quality development, benchmarking and the use of PIs. This is supported later in this study by a more focussed review of the literature used in developing standards for ICT support services.

In the general context of the wider literature, findings can be divided into five key areas of interest.

- The historic development through the literature.
- Benchmarking in the public sector.

- The development of PIs in Scottish FE.
- International comparisons.
- Comparison with other sectors.

This is pulled together with conclusions from the literature review.

Key points arising from section 4.1

- The literature review needs to be marshalled under distinct headings to be appropriately laid out, compared and understood.

In terms of the research objectives, this section raises the following issue.

- The literature review will have greatest contributions to make in the investigation of questions 4 and 5.

4.2 The historic development through the literature

4.2.1 Review of the literature

As areas of academic study, 'quality' in general and 'benchmarking' in particular are relatively new topics. Huczynski (1993) mapped a range of major contributors to management thinking over the last century, and identified key stages. These "popular ideas" started with Weber and the notion of Bureaucracy (cited in Huczynski, 1993, p11). Weber introduced the concept of management being ordered and systematic in its approach. This was followed by the work of F.W. Taylor who founded the school of Scientific Management (cited in Huczynski 1993). Taylor promoted the idea of using measurement and scientific methodology in improving performance. There was a school of thought with some similar approaches based on Administrative Theory, characterised by the work of Henri Fayol (cited in Huczynski, 1993). From this work the application of the systematic approach was more clearly identified as applicable out-with the realms of engineering. The Human Relations school, however, characterised through the work of George Elton-Mayo did give a clear signal that individual and personality characteristics were not to be forgotten in this systematic approach.

Within all of these approaches 'quality' as a topic had a relatively low profile. This changed, primarily in the 1980s. There is, in the literature, a common view of the prime reason for this change and the emergence of a higher profile for quality. "Historically this relatively new emphasis on quality took root in the manufacturing sector - largely thanks to the ever increasing success of Japanese companies in the world market" (Wisniewski, 1994, p.199). The Japanese companies referred to were known to be strongly focussed on quality and on systematic approaches to quality. Many of the lead journals and publications on quality readily cited Japanese examples and adopted the Japanese terminology of key quality terms. These approaches and philosophies made an impact on the major industrial companies in America and the UK.

Through the history of management a number of approaches to quality developed. These various tools, approaches and 'technologies' have caused a range of writers to confuse elements of quality improvement. Some writers go to the trouble of trying to take these differing approaches, and sort them into some kind of understandable structure. The literature identifies six competing "...technologies for improvement

- Benchmarking
- Total Quality Management
- Process Simplification
- ISO9000
- Business Process Re-engineering
- Competitive tendering/market testing" (Asher, 1996, pp.15-16)

In this analysis of the situation, the optimum approach to improvement is based upon a balance and understanding of all of these approaches, and the appropriate use of a mixture of these. As Asher stated "Taking a reasoned decision about the way forward demands an understanding of all of them." (1996, p16). This understanding is required to apply an appropriate balance within any specific work situation. One major difficulty in this approach is to be found in the variety of definitions of each of these 'technologies' that writers chose to adopt.

The wide range of literature showing similar thinking to Asher reflects a poor understanding of a complex scenario. There seems to be confusion between approaches that look at quality measurement, and approaches that look at quality improvement. Measurement can be applied without it being used to improve quality. It can simply be about monitoring. Standards based work where an external audit to check that performance meets a set of criteria is common. This would include SQMS, ISO9000 and IiP. The purpose underpinning many of the approaches is improvement, hence measurement and standards can be a smaller contributory element of the theoretical model allowing a more objective judgement of improvement. The poorer work of Asher and others, concentrating

primarily on measurable standards (see section 9.3.3) contrasts with the thinking of those with a focus on improvement. The concept of benchmarking is the concept of measuring with a view to finding evidence for improving practice. This concept works regardless of the standards or measurements used.

A well-established pioneer and exponent of benchmarking is Professor Robert Camp. As the leader in the field, Camp developed his work working as Director of Quality with the Xerox Corporation. Almost without exception, Camp's work with Xerox is used within any publication on benchmarking. Camp defined benchmarking through the words of the CEO of Xerox, David T Kearns.

“Benchmarking is the continuous process of measuring products, services and practices against the toughest competitors, or those companies recognised as industry leaders” (1989, p.10). This definition was a strong starting point, but as practice developed, definitions were revised. Many writers looked at the purpose and use of benchmarking for their projects, and adjusted the definition they used to fit with the purpose.

Fisher looked at 10 definitions from established academics and proponents of benchmarking. From this, he established “...the common themes

- a point of reference for measurement
- a study of key internal processes
- comparison with other organisations
- continuous improvement, and
- to become the best” (1996, p.15)

Although he found common threads, the need to seek these common threads was driven by the lack of uniformity of definitions. Fisher took the argument further by stating that “...the use of the term ‘benchmarking’ has not yet achieved common unambiguous understanding” (1996, p.17). This lack of an agreed, acceptable or uniform definition is one that makes a useful review of the literature a more challenging activity.

It is important to ensure in both the literature and practice observed that there is a clarity and consistency of definition. If this consistency is not evident, then some conclusions and experiences from one study may not be applicable in other situations. This is evident in simple examples, where writers may, for example, cite large American commercial corporations. Is their use of the term 'benchmarking' the same use that other writers would intend? Even where the definitions are similar, the context of, for example, a small UK public sector body may be so different as to make comparisons difficult. This also raises the question of what purpose and application benchmarking has. The characteristics described by writers such as Fisher (1996) and Cook (1995) do give a confidence that the general purpose and benefits sought have some consistency. Cook lists the benefits to be gained from benchmarking as

- "It sets performance goals.
- It helps accelerate and manage change.
- It allows individuals to see 'outside the box'.
- It generates an understanding of world class performance."

(1995 p15). This ability to identify common purposes does give some confidence that the ideas and approaches in the wider literature and work have many common elements.

The work of people such as Fisher and Camp highlight a clarity of understanding the purpose of the work. This is good work, contributing well to the ideas and practices of improvement. Where a cynical view may be to look at such contributors as "gurus" whose temporary ideas may be in fashion for a relatively short period, it would be difficult to deny the value of their contribution at the time of their writing.

In recent years, more experienced and mature literature on benchmarking has emerged that describes benchmarking as a more complex and rather less mechanistic process. Authors, such as Karlof, warn against a concentration on benchmarking only as a process of collecting data methodically. He states

“Purely numerical information should be treated with caution until the underlying operative content and work processes have been investigated and understood” (1995, p.49). This is entirely consistent with consultants and writers who publish in the wider field of management. As Drucker stated “Quantification has been the rage in business and economics in the last 50 years...neither our concepts or our tools are adequate for the control of operations or for managerial control” (1995, p.101). What is needed is a clearer understanding of the philosophy, principles and approaches of benchmarking practice within modern management.

A central role supporting a TQM philosophy is evident in the wider literature. A model (almost as a hierarchy) was developed by Fisher as follows

Total Quality Management	-	The concept
Kaizen	-	Drive for continuous improvement
EFQM	-	Framework for corporate strategy
ISO9000	-	Measurable standard
Benchmarking	-	Collecting and analysing data

(1996 p90)

This outlines the differing approaches and models as a complementary set of tools to be applied at the different levels of operation within an organisation.

There is, within the literature, a remarkable similarity between UK (and European) and American work. In Europe, a model of quality was developed through the lead of 14 key manufacturing organisations that formed the European Foundation for Quality Management (EFQM). An EFQM award-based standard was developed to share best practice, and it has had a strong influence on the development of quality in Europe. In America, the Malcolm Baldrige National Quality Award developed in a very similar way. As Boxwell observed “The Malcolm Baldrige National Quality Award has played a large role in popularising benchmarking in corporate America.” (1994, p.141). This award, started in 1987, follows a similar approach to EFQM. It is, however,

reasonable to assume from the examples within the literature that it is stronger in the corporate private sector than in the public sector.

Most writers have generally described benchmarking in three or four categories. The most influential writer to describe this is John Fisher who described the four types as

- “Internal benchmarking
- Competitive benchmarking
- Functional benchmarking, and
- Generic benchmarking” (1996, pp.15-16)

These categories tend to refer to both the process applied and the outcome desired from the application. Not all organisations will apply these four with equal importance. One circumstance where a different balance and profile may be applied is in public sector management. This use of categories in the literature helps to make more appropriate ‘like for like’ comparisons. It also helps to focus on what might be different in public sector benchmarking.

4.2.2 Key messages arising from this literature and reflective opinion

This review finds an early basis for the formal measurement of work as far back as the industrial revolution. It is questionable that the work of people like Taylor, working in contexts such as a steel plant, can genuinely add to current thinking. One reflection on this idea of using measurement to improve performance is that there was a reasonably quick “backlash” to develop an evidenced based human relations school. This alternative view was a salutary reminder that this study resides within the realm of social science rather than pure empirical science, and that beliefs and attitudes are important elements in performance. This is a key point to consider in developing a PI model, and leads to the conclusion that the interaction with the information (not simply the information itself) is a key focus of attention.

Impressively structured frameworks to systematically improve quality developed in the late 1980s, confidently supporting the assertion that systematic processes were the only way to manage quality assurance. Indeed, the terminology of 'quality assurance' rather than 'quality improvement' pervades this literature, giving a clear sense of the process driven manufacturing model these systems were designed for.

Looking at the work of Camp and others who led the benchmarking movement, the assumptions carried in the literature as well as the direct content of the literature give cause for concern. The authority of Camp's work was not the academic or philosophical base, but the commercial success of the organisations. This is clear from the introductions, summaries and reviews of the work. It seems remarkable that this type of authority was so uniformly accepted. Recent experiences of sudden corporate failure such as the Maxwell Corporation, Railtrack and Enron provide simple examples where the line between incredible corporate success and catastrophic failure can be crossed in a day.

It is clear that the literature has not been consistent over time, in the context, or in the terminology. For that reason, some care needs to be taken about drawing conclusions from individual publications. Writers such as Fisher and Cook look across literature, and look for themes and widely evidenced conclusions. The author has a faith that this is robust and useful work. It is, however, remarkable that this did not appear until 1996, demonstrating that the lessons from history are limited and hard to find.

It is surprising that the literature on quality, looking at models like TQM, EFQM, and ISO9000, are quite unscientific in their approach. Where they all provide evidence of improved quality (using their own measures) there is no literature suggesting that an intuitive manager, motivating staff and working in a wholly unsystematic and unstructured way, could not achieve the same outcome. Indeed, a growing literature on the personality characteristics of effective

teachers and leaders provides some evidence that this would be worthy of investigation. In short, the literature on standards provides evidence of usefulness, but may not be providing a full picture.

Major lessons from the historic or older literature are difficult to find. The main lesson is the recent work giving clarity of purpose in the use of benchmarking and PIs.

Key points arising from section 4.2

- The older literature on benchmarking is embedded in the literature of management, but has a long history in that context.
- There was a growing interest in 'quality' from the late 1980s.
- There are various definitions of key concepts related to PIs and benchmarking within the literature.
- There are strong common strands in the purpose and use of benchmarks within the literature.

In terms of the research objectives, this section raises the following issues.

- The complications of varying definitions of quality and the varied use of concepts of quality make it difficult to marshal precise ideas from the literature.
- The common strands emerging on purpose and use of benchmarking will help inform and compare how the process of improvement may work in FE when compared to other sectors.

4.3 Benchmarking in the public sector

4.3.1 Review of the literature on benchmarking in the public sector

The development of quality in the public sector has been a strong movement over the last two decades. Bendell (1993) described TQM and benchmarking in the context of the public sector as being problematic in their application. He cited a number of specific reasons for this. Those were:

- staff culture and the lack of individual ownership, responsibility, client care and self empowerment;
- bureaucratic and non responsive systems;
- lack of clarity about the multiple customers and stakeholders involved in even single transactions;
- political, as opposed to market determined levels and extent of service, especially for subsidised and zero priced services;
- problems of scale and complexity associated with the large centralised organisations, sometimes with a large scale technical base (Bendell, 1993, p.123).

In spite of these difficulties, benchmarking in the UK has been strongly supported within the public sector. Indeed, where the example of Xerox is the 'classic' American study, the Post Office is the first high profile UK experience. The Post Office 'Customer First' initiative launched in 1987 was the start of the major published benchmarking activity in the UK.

The literature describing the Post Office work should be considered within the social and political context at the time. Where there is no clear evidence to contradict any claims made within official publications, the style of presentation does raise some concerns that there is a political point to be made. The public sector adoption of practices previously viewed as good practices developed by the private sector does make a good political point. This is true regardless of the party in power at the time. Therefore, although highly publicised and well

written, it is important to consider a wider information base if the reader is to have complete confidence in this work.

The Cabinet Office further developed this work in 1991. A consortium of 11 government departments and agencies was established. Its role was to “...encourage, co-ordinate and support projects...which will enable departments and agencies to achieve demonstrable and continuous improvements in the quality of service they provide” (Bendell, 1993, p.123). This work was to further develop and underpin the concept of the ‘Charter Mark’. The Charter Mark award is viewed in the public sector as a prestigious award, reflecting a culture of customer focussed quality improvement.

The Charter Mark was developed by government, and was based on six principles. Those principles are very similar to well established TQM and benchmarking concepts. The six principles are:

- publication of the standards of service that the customer can reasonably expect and of performance against these standards;
- evidence that the view of those who use the service has been taken into account;
- clear information about the range of services provided in plain language;
- courteous and efficient customer service from staff who are normally prepared to identify themselves by name;
- well sign-posted avenues for complaint if the customer is not satisfied, with some independent review wherever possible;
- independent evaluation of performance against standards, and a clear commitment to providing value for money.

These principles, primarily the first and final principles, clearly outline a commitment to a benchmarking approach within public sector management.

Implementing the approaches to TQM and benchmarking within the public sector has a number of associated difficulties. There is a general consistency in

the literature on what those difficulties are. The views of Dale and Oakland (1991) summarise this succinctly. They describe three main difficulties in starting the process of TQM:

- ‘flavour of the month’ attitude;
- lack of structure for TQM and lack of real leadership; and
- lack of management commitment and vision.

The problems have been evidenced by numerous documented attempts to implement the quality standard ISO9000. This observation is re-enforced in the wider literature where problems of implementation in the public sector are a key feature.

4.3.2 Key messages arising from this literature and reflective opinion

There is a relatively short and light literature on benchmarking in the public sector. The theoretical model of benchmarking also appears in a number of ‘political’ initiatives. Where this does not necessarily negate the value of the literature, it does make it harder to interpret and more difficult to pull robust conclusions from.

Major lessons can be learned from the experiences described in the literature. It is clear that adoption of well researched ideas as a part of a government initiative can help the profile and, therefore, implementation potential of sound theory. Putting theory in the wider context of improving public services is likely to generate a wider base of support. This suggests that the lobby for evidenced based policy making should be considered in a political context, and wrapping up good ideas in a new approach with a profile, title and appealing image is one way of optimising impact. The quality and rigour of the research is likely to be more influential in the sustainability of the approach, rather than the profile gained in its initial adoption.

There are impressive and genuine quality initiatives to be found in the recent literature in specific areas of the public sector described in other sections of this

study. However, the initiatives, titles, 'arms length' reporting structures and models of devolution of funding and authority make it difficult to pull these together as clear public sector examples. The early literature assumed public sector to be large scale, bureaucratic and highly structured. This is, in part, no longer the case. Where examples from education and the health service are clearly publicly funded, the devolved models of funding and authority do suggest that some of the early literature on public sector benchmarking is no longer applicable.

Key points arising from section 4.3

- Benchmarking in the UK public sector has been established since 1987.
- Benchmarking in the public sector is widely reported as difficult and different in nature to benchmarking in the private sector.

In terms of the research objectives, this section raises the following issues.

- The relatively short history of benchmarking in the public sector will make comparisons with other sectors and times more limited.
- The reported difficulty of public sector benchmarking is likely to apply in FE, and limits the anticipated value of literature in contributing significantly in providing great insight into all five research questions.

4.4 The development of PIs in Scottish FE

4.4.1 The development of PIs in Scottish FE

The management and governance of Scottish FE has developed through a number of historical influences. FE in the current recognisable form was widely available from the 1960s, which is a reasonable starting point for this review. The Plowden Committee sitting in 1963 was an influential committee leading to a number of reforms in planning and control of public expenditure. These changes were broadly accepted as necessary to improve the management of public services. Colleges at this time reported through the County Council system, and latterly the Regional Council system. Reporting and management functions were largely centralised within council systems, and colleges did not use any real benchmarking or PI information internally.

The Audit Commission (1985) work on obtaining better performance in further education concentrated entirely on efficiency. This work led to the publication of “Managing Colleges Efficiently” (Further Education Unit, 1990). The very basic indicators developed here were simple costing tools, which did not attempt to deal with the issues of effective delivery of the service.

Work was done from 1990 to 1993 to change and develop the reporting procedures for local authorities. Local authorities were required to publish certain information on their standards of performance through the Local Government (Scotland) Act 1992. The influence of this was clear in the initial reporting information asked of colleges. This reporting information required by the Scottish Education Department had been initially defined in “Measuring Up” (SOEID, 1990), a report developed by HMI. It states “The three goals of enhancing quality, increasing accountability, and improving value for money require the development of a set of valid, reliable and comprehensive PIs as a tool to inform managers and improve decision making”. The five PIs from this publication are widely known as the Five Primary Performance Indicators (see section 2.2.1).

These were further developed through The Scottish Office Education Department publication "On Target" (SOED, 1993). This document helped to clarify the potential interpretations and uses of the PI information, and was widely adopted as the central document of guidance. However, the reporting requirement on colleges was subject to revisions in three different aspects. First, the college development plan guidance notes identified what PI data should be used within plans submitted to the Department. A second aspect was the budget information requested from each college, which was also requested using standard data sets. The third aspect was the publication of Annual Reports, which were required to publish certain college wide PI information. In guiding colleges in these reports, the SOED would indicate definitions and changes through circulars.

These circulars were often subject specific covering information on topics such as Finance or Estates, and were not always disseminated to all staff who would need to know the implications for PIs (as the programme of college interviews demonstrated). Two central circulars, 14/95 and 10/96, actually redefined PIs, but were not comprehensively distributed or understood (see sections 8.1.3 and 8.2.2).

In the same time period (1993-1997) in FE, the quality agenda was being driven by a quality standard that had been developed by SFEU with the support of SE. This was known as the SQMS (see section 3.4.1). SQMS did not require the publication of PI data. As a 'compliance standard', it required that colleges collected and reviewed information. However, impact or change as a result of review was not an audited activity, and not a major focus for colleges. SQMS had become the focus for quality assurance as SE and HIE had indicated that achieving SQMS would be a required condition for contractual funding. Therefore, the constructive use of PIs and benchmarking became less of a priority for colleges.

In recognising the positive contribution of this work, with the standard still being a central standard in use, it is also important to recognise the motivation of the agencies in developing this work. The FE colleges did not seek standards for quality improvement, but were being given those standards by a major potential funder. SE would apply these standards to demonstrate value for money, and apply influence to the FE and training providers. This motivation may have led the work to a relatively simplistic model, heavily supported through external audit. The scope of the standard extended to areas such as planning and finance that did not have a great impact on the student experience. This, on reflection, may have been predicated on having a strong influence on the development of providers rather than a focus only on quality improvement.

In 1993, SOED published the Further and Higher Education Student Charter guidance (SOED, 1993). This was also influential in developing a customer focus and quality improvement culture. However, there was no evidence that a benchmarking approach was used in developing an effective college (or university) charter. Indeed, each institution individually developed its own charter, and had no information available on the effectiveness of such a document in any other institution.

To summarise, the key influences in quality management around in FE in 1993, the year of incorporation, were SQMS, Student Charter, On Target, and the reporting of PIs as required by the SOED. There is little evidence of PI or benchmarking data being a major element of quality systems or quality improvement.

Major changes in the development of quality improvement (as the sector grew after incorporation) were two-fold, a national TQM project based on senior management training and led by SFEU from 1994 to 1997, and the use of individual quality standards. The TQM project was a process driven activity,

which had a focus on the quality of management, as opposed to the quality of delivery. The introduction of standards and awards on the basis of individual institutions used common organisational quality standards such as ISO9000, Charter Mark, IIP, EFQM and SQA Accreditation. None of these models used PIs or benchmarks in any meaningful way for external comparison of performance.

Quality improvement was, however, an emerging issue within colleges at this time. The idea of the reflective practitioner and learning organisation were introduced and promoted to the sector in 1997. SFEU and HMI jointly developed an approach outlined in the publication “Quality Improvement Through Self Evaluation” (SFEU, 1997). This was published and launched in September 1997. The thrust of this work is to make evidence based judgements at an operational level that can inform changes to improve quality. This relied on PI information being available to help evidence judgements. The early development and support work in promoting this approach highlighted the weakness of PI information.

The establishment of the SFEFC in July 1999 has also highlighted a need for more robust PI and benchmarking data. The SFEFC believed that its information base on quality needed to be strengthened and extended for FE provision. Therefore, there was a growing need to further investigate and develop the PI and benchmarking model for FE.

4.4.2 Key messages arising from this information and reflective opinion

The development of quality measurement for use in college management has been driven through the quality standards coming from outside the colleges. Compliance standards such as SQMS are widely regarded as positive to get an identifiable but minimal standard of quality audit for colleges. However, even where the standard is viewed as robust and useful, there is still a tendency to see this standard as belonging to some external body.

The TQM project looked at quality improvement through management, and sharing experiences and good practice in a fairly structured way. This approach was very welcome, and widely hailed as a very positive initiative. There is a significant lesson here to promote the idea of ownership, and ensure that training and sharing ideas is a major element of quality improvement.

The model of self evaluation developed in 1997 took these lessons on board in the design and implementation. The model was widely adopted very quickly (in spite of there being no compulsion and no “logo” reflecting external audit standards being applied). The strong elements of this model of consultation, training, support for sharing good practice and promoting ownership was used in revising and extending the use of PIs.

Key points arising from section 4.4

- The first basic college PIs were developed through the Audit Commission in 1985.
- College PIs that looked at delivery were introduced through ‘Measuring Up’ in 1990.
- Since 1993, colleges have been required to report basic PI information that is not audited.
- The use of PIs for institutional quality improvement has only been in place nationally since 1997

In terms of the research objectives, this section raises the following issues.

- The short history of PIs in Scottish FE help explain why the literature is light, and there is limited confidence that they are being used effectively.
- Given that the current model of using PIs has only been in place since 1997, the importance of the first three research questions is heightened as being useful to the sector in reviewing professional practice.
- This information raises for the first time an issue related research questions 2 and 3, is effective use of PI information about other applications (for quality improvement) rather than more rigorous applications (for quality reporting)?

4.5 International Comparison

4.5.1 The American Community College model

As a model for international comparison with Scottish FE, the American Community College System is a prime candidate. In the cultural context, the development of management and quality as areas of study has a great deal of common ground. Indeed, it would be fair to say that there is, generally, a shared literature. The common language is not the only base for this. The major commercial organisations that have developed benchmarking approaches (such as Xerox and IBM) have a substantial UK and American presence. The ‘Community College’ (or Two Year College) system in America has a similar structure to Scottish FE, with similar aspects of vocational education, a very similar age profile, a matching growth rate and a central role in providing the country’s technical level workforce whilst supporting articulation to degree work.

American society in general and the education system in particular are more accepting about the use of objective statistical data. For example, career and education decisions are often driven by the results of aptitude testing (SATs). Similarly, access to high demand degree courses in topics such as teaching is derived not through basic subject passes, but through grade averages. This is clearly a culture where more specific measurement is the norm. However, America does not have a unified state wide or national qualifications system. As a result, many exams used for grading are specific only to the particular college or institution. This is a major contrast with the Scottish system where the content and assessment criteria are absolutely uniform across over 90% of assessed curriculum provision in Scottish FE through the extensive use of SQA accreditation. The American system does look at comparisons in circumstances where national standards exist. These standards tend to be in areas where there are state exams or national “License” requirements, such as nursing.

The approach to PIs and benchmarks in American college education was outlined by Shavelson -

Educational indicator systems serve similar purposes to indicator systems that are used to monitor the economy, the criminal justice system, or other social systems. Statistical indicators are used to monitor complex conditions that we would probably judge imprecisely or miss altogether in day to day observations. (Shavelson, 1999, p.1)

He goes on to outline what PIs can and cannot do, and how they are used in the American college system. Shavelson reviewed 48 studies of benchmarking in college education stemming from the 1970s. This gives a reasonable historical context, and outlines stages of progress that were broadly similar to American commercial activity. It is also reasonable to say that his observations are very similar to those of writers within the Scottish (UK) system.

Within the last few years American colleges (or “Schools” as they are described in the literature) have moved toward routinely measuring the outcomes of their educational programmes. Established writers such as Cohen (1994) base their work on this understanding. Two major associations, The American Association of Community Colleges (AACC) and the League for Innovation in Community Colleges have not only addressed the importance of institutional assessment in community colleges, but also displayed indicators and definitions to estimate effectiveness in the college sector. There are a series of 13 indicators that form the basis of a national framework.

Of the thirteen US indicators, Cohen (1994) identifies:

- three on student progress (loosely similar to SARU and SPAR);
- two on career preparation (loosely similar to PCSR);
- two on transfer (or articulation, loosely related to PCSR);
- one in development education (with no equivalent in SEN);

- one in customised education (no equivalent); and
- two in Community Development (no equivalent).

As these indicators were being developed and used, there were national developments in the spheres of politics and governance that promoted a more focused use of PIs. This is commented upon by writers such as Gaither (1995) who observed that

Accompanying this movement was a subtle shift from growth in funding, principally through formulae funding, towards funding 'outcomes' or 'results' or 'performance'. This focus on performance, using funding incentives as motivators, helped encourage the policy makers and academic community to explore the use of a system of indicators to raise warning signs about the efficiency and effectiveness of higher education. (Gaither, 1995, p.7)

This link with funding is widely reported as having an impact on the response to these indicators. In general terms, there was a much greater focus on the PI to evidence improvement and lever further funding. There is a potential warning here for Scottish FE regarding the possibility of a simplistic approach to PIs. Indeed, recent UK reflections on the benefits of linking an HE institution's Research Assessment Exercise scoring and funding in HE reflect this type of concern.

There is concern within the US system about the use of these indicators. Many writers believe that they are broadly in place to monitor public sector policy and implementation. However, as public sector priorities vary from state to state and institution to institution, there is a serious question of validity. Further, these quantitative indicators are not well supported by qualitative indicators. As Cohen (1994) states "...considerably less progress has been made in employing more abstract indicators of institutional effectiveness, such as general education

outcomes...” Notably, this issue is raised in this study in the Scottish context in phases 2 and 3 (see section 8.5.4).

There is some evidence of PI and benchmarking information being a focus of attention that has an ‘opportunity cost’. In essence, concentration on the basic PI information may detract from work to impact upon quality development in colleges, even where there is a sound research and information base. One example of this might be to look at work on student guidance. High quality guidance/advising is correlated with increases in students’ self esteem, satisfaction with college and persistence in school. This view is widely evidenced in AACC literature. Yet national surveys reveal on most campuses, when it occurs, academic guidance/advising tends to be primarily clerical in character rather than developmental, focussing on registration and administration issues. This observation clearly outlines one key limitation of PIs, and the risks associated with too tight a focus on the indicator information.

Given the cultural and contextual differences, the literature review work on its own does not give a full picture of how quality is perceived and improved at course leader level. To get a fuller picture, the literature review is supported by the views of two course leaders (in nursing) from opposite ends of the country. Where these are anecdotal in nature, they do reflect fairly the general feedback from a wide range of Course Leaders contacted in the American Community College system. This gives a quality improvement perspective that extends beyond the basic literature to interpretation and application.

Dr Gale Woolley is Dean of Faculty and Course Leader in Nursing at the Medical Campus of Miami Dade Community College. The Author visited Miami Dade in April 1998, and invited Dr Woolley to Scotland to run a series of lectures and workshops in May 1999. Through discussion, it is clear that there are some aspects of quality of service that are similar. Student pass rates, and student feedback on satisfaction are critical. In Miami, these are compared

primarily on an institutional basis, and not across the state or country. 'Targets' for attention and improvement are defined by the course leader, and generally are compared with other courses within the college, and previous year's performance on the nursing course. Quality is, however, very much a practitioner issue. Developing new approaches, and satisfying demands of host hospitals and potential employers is paramount to practitioners. This work is primarily driven by qualitative liaison and discussion, and not through statistics, benchmarks or PIs.

Mary Raboin is Senior Lecturer and Course Leader in Nursing at Moraine Park Technical College in Wisconsin. The author hosted Mary in an exchange with Wisconsin University in October 1999 and co-ordinated the exchange of six college staff. Again, the key indicators used in Wisconsin to inform quality are student pass rates and student satisfaction. These again are focussed internally. "Grades are defined by college testing, and faculty [staff] would not be entirely comfortable trying to compare these with other institutions" (Raboin, 1999). Again, the employer satisfaction with graduates is paramount, and regular formal and informal contact is essential. In the state of Wisconsin, funding for a course such as nursing is at risk if the grades in the national final exam are below the national average three years in a row. Therefore, there is a strong focus of effort on this statistic. However, the staff substantially must reflect on its own experience and input to help improve the practice underpinning the results.

In America, each state regulates and supports its own Community Colleges, therefore, not all comparisons are 'national' as there are generally some state differences. One of the minor differences tends to be how the states use and collect benchmark information. In one extreme, the state actually collects information as a college 'report card' and uses that information for comparison with others. This approach may help inform college management of the relative quality performance of its institution. However, is not central to either explaining the reasons for the differences highlighted in the statistics, or

informing staff at course leader level about its relative position or identifying where best practice is to be found.

4.5.2 Key messages arising from this literature and reflective opinion

This American model is an interesting model, particularly with regard to how similar the colleges are yet how different the quality improvement systems are. It was also important to look at the national and regional literature, as well as talk directly to managers and lecturers.

Although American colleges are primarily publicly funded (in spite of the beliefs of many Scottish staff), they do have more in common with market driven business models than Scottish colleges. One observable characteristic of this is the idea of small independent sections working in an institution often viewing themselves as being in competition with other sections. This gives an enhanced drive for college staff to collate PI information as indicators of success (rather than measures to underpin improvement). There is sufficient evidence of the negative or distracting effects of collecting and using PI information in American colleges to provide a strong cautionary note.

This cautionary note should be balanced against evidence that there is real ownership of quality by staff, looking primarily at student and employer satisfaction. This last point is in sharp contrast to Scottish FE, where employers hardly feature in any quality review.

The 13 standards outlined by Cohen also provide an interesting comparison. The American system collects PI information in areas where Scottish colleges do not. It is interesting to note that the debate on having a “value added” PI for Scottish FE has already been overtaken in America, but they had to develop a range of indicators to meet this need. It does, however, give a good starting point for this work.

Interestingly, the links made with America over the last three years have created a growing interest in the Scottish self evaluation model and the possible application in America. Where they have a confidence about the robust collection of PI information, they have a real interest in how this can be used more constructively for quality improvement.

Key points arising from section 4.5

- The American Community College system is a reasonable comparator with the Scottish FE system in many respects.
- The use of basic PIs in the American Community College system linked to funding is widely accepted as distorting the quality agenda.
- Quality improvement in American Community Colleges is viewed by Course Leaders as a practitioner issue, driven by direct feedback from stakeholders

In terms of the research objectives, this section raises the following issues.

- Different PIs are used and these ideas may be helpful in considering research questions 2 and 3.
- The evidence from this comparison suggests that linking PIs with funding would not be viewed as an improvement in the use of PIs, this has a direct bearing on research question 2.

4.6 Comparison with other sectors

A look at other sectors may provide a useful insight or perspective on PIs in Scottish FE. The sectors used within this study are a general review of literature in:

- Scottish Higher Education;
- the Health Sector; and
- the Scottish Schools Sector.

4.6.1 Scottish Higher Education

In Scottish Higher Education, the general governance, reporting and control is co-ordinated through the SHEFC. However, HE institutions appear to enjoy a greater level of autonomy than FE institutions, and do not have the same level of reporting requirement.

HE institutions do not attempt to offer exactly the same provision as each other, and generally do not try to make exact comparisons. Some benchmarking work is administered through the Consortium for Higher Education Benchmarking Association (CHEBA). This consortium, in the words of introduction from their website (<http://cheba.com>), "...has formed to meet the growing need for formal benchmarking within academia...Benchmarking is one way to gain insight about particular processing areas." From this introduction (and the trans-national nature of the membership) it is clear that the benchmarking process co-ordinated by CHEBA is focussed on the needs of institutions to look for improvement in effectiveness and efficiency. It does not appear to be related to reporting needs, or the issue of public accountability.

Professor John Sizer, the former Chief Executive of SHEFC has had a long standing interest in PIs, and particularly those related to financial aspects of university functioning. His early work (Sizer, 1992) set out PIs in three categories:

- process (the way things are done);
- progress (the stage the organisation has reached in moving toward objective attainment); and
- outcome (the results of organisational activity).

This analysis is evident in the SHEFC quality framework and in various publications on HE activity. The work of the Dearing Committee has raised (for UK higher education) the issue of PIs and Benchmarks for the sector. The result has been the formation of the Performance Indicator Steering Group. Just as with Professor Sizer's early work, the prime focus of this group has been the needs of public accountability.

This work on PIs and Benchmarks has been considered further on a UK basis, and the Higher Education Funding Council for England (HEFCE) research currently underway looks at the wider needs of stakeholders, including students. This wider range of PIs include:

- multiple outputs;
- input measures; and
- sector level indicators and benchmarks.

It does this with a priority on accuracy and simplicity. This would suggest that the wider publication of information (as recently occurred) will be the norm, in spite of concerns expressed over the validity and usefulness of such information.

4.6.2 The Health Sector

The health sector has been driven to publish performance information for a number of years. The Health Service PI framework has six key component areas. The six areas are as follows:

- health outcomes of NHS care;
- health improvement;
- patient/carer experience;
- fair access;
- efficiency; and
- effective delivery of appropriate health care.

Each of these areas carries a range of nationally defined PIs to describe performance. These were developed and outlined in a seminal NHS paper “A First Class Service” published in July 1998.

The details of these can usefully be found through the website www.doh.uk, available for public access. These indicators have been developed through a national executive determining measures for public accountability, and to ensure compliance with specific (politically driven) priorities. The National Institute for Clinical Excellence developed these ideas to underpin a three pronged strategy, setting standards, delivering standards and monitoring standards. There is clearly a tension in this work where those with an interest in issues of public accountability on the one hand and improvement in operational quality on the other are looking for reconciliation within the one framework.

The period of ‘market’ activity in the NHS where devolved budgets allowed funding to be indirectly linked to performance put a greater focus on the PI data. However, there is no evidence available to support the notion that quality (or even the raw PI results) improved significantly over this period. Similarly, in the past two years, where additional funding has been made available where PI data paints a ‘negative’ picture, there is no evidence that additional funding had a direct impact in the current time-scales. This is recognised within many of the key publications. The June 1998 NHS publication ‘Working toward a better health service’ stated, “These indicators should not be seen as a direct measure of quality, rather they should be used to raise questions about patient care and prompt further investigation”. This more sophisticated view is clear in the

professional specialist media, but not always evident in the use of the data in the generic national press.

More recently, there has been a focus on the notion of 'best value' within the public sector generally, and the NHS in particular. The lead work and documentation look specifically at local authorities to develop this model. In reading the support documentation, there is great similarity between this work and the quality development work in other sectors. For example, the Scottish Executive report 'Best Value 2' (Scottish Executive, 1998) states "Benchmarking is an essential tool in delivering continuous improvement but it is also a term which is frequently misunderstood. Too often communicators focus on the benchmarks as numbers or indicators, without regard to the circumstances that explain them". The document, developed jointly with COSLA, promotes improvements in quality broadly using a PI and self evaluation approach, although the terminology used often lacks absolute clarity and definition, and may at different times have different meanings.

4.6.3 Scottish Schools

Scottish schools have had a number of quality initiatives and developments in the past decade. They are also supported by a number of institutions, the most significant of these being the Scottish Council for Consultation on the Curriculum (SCCC) and HMI. SCCC (later to become LTScotland) has produced a seminal publication on self-evaluation for schools, "How Good is Your School?" (1995). This framework is widely used within schools, and is widely recognised to have made an impact on quality development. However, there is again a question of whether the nationally established benchmarks (as characterised by the statistics published by the Scottish Executive) and quality improvement at the senior practitioner level is linked in any meaningful way.

The early work by SOED in defining and using PIs in schools was very basic in its approach. Research done by Professor Carol Fitz-Gibbon from the University

of Newcastle looked at examination results as PIs. Her conclusions do suggest that Scotland was, at that time "...in the forefront of developments taking place around the world in the monitoring of educational outcomes." (1991) However, the study does not seem to provide real evidence of comparative international development to support this conclusion. One strength of the study was that principles of how to further develop an indicator system were identified. These were based on fairly broad desk research, and put firmly in the context of school management. These principles, as outlined by Professor Fitz-Gibbon are:

- PIs should be seen as measuring the extent to which agreed goals are being achieved and agreement should develop as the system develops;
- the atmosphere should be one of information and collaborative investigation, not surveillance and judgement;
- the indicators should be broken down into units of management within schools - generally school departments or their equivalent;
- the aim should be for quality assurance in every department, not competition between institutions; and
- school departments/faculties should receive and understand all the performance indicator data.

This work provided much of the thinking underpinning the approaches to self evaluation in schools and the publication of 'Standard Tables' of school results.

HMI Audit Unit recently investigated the operational impact of the self evaluation model for schools. This self evaluation model is based around targets set by the school/authority based on national benchmarks (averages). One of the leading documents of guidance in this work is the Scottish Office publication 'Good Practice: Making it Happen' (SOEID, 1998). The conclusions of this report give a clear indication how staff should use the guidance.

With individual schools, staff should ask questions like

- Where do our standards match, exceed, or fall below the good practice illustrated here and in performance indicators?
 - How can we use this report in our school to develop the use of performance indicators?
 - How can we use this report to help us prepare our own school's statements on standards and quality?
- ...teachers have used the suggested techniques to carry out constructive but realistic self-evaluation aimed at improving standards and quality

This final phrase is telling, as it appears to define the purpose of using PIs, which is often complicated with the notion of public (and political) accountability.

The general conclusions of this work with schools, based on structured feedback from 16 schools, were quite positive. This appears in the Scottish Executive (1998) publication 'Making it happen with Performance Indicators.' The feedback from St Columba's High School included this comment "The performance indicators in 'How Good is your School?' arrived at an opportune moment and were adopted in preference to other systems because of the benefits they brought in providing national points of reference". Within the document, there was another interesting comment from Port Glasgow High School that exemplified a wider understanding of the benchmarking process. "Good practice within departments is published to the whole staff on an annual basis. Not only is this a celebration of success, but it allows a spread of good ideas from one subject to another". There is a strong, consistent and positive series of testimonial comments within this publication.

This school experience has two key elements of particular interest, the use of national benchmarks, and the process of engaging staff in self-evaluation. There is a very strong emphasis within the feedback that the staff development

provided and management support for self-evaluation are critical factors within the positive outcomes. Girvan Academy specified

“A whole staff exercise on an INSET day in February 1997 involved cross curricular groups in using all 33 performance indicators to review the work of the school. The purpose of the exercise was

- to familiarise staff with ‘How Good is your School’ and the use of PIs;
- to undertake a broad look across all 7 key areas; and
- to identify successes and development priorities.”

This is a fairly typical approach, where Planned Activity Time (PAT) and INSET days are used extensively to explain the purpose, ensure understanding, and encourage active support.

This drive to engage staff is broadly viewed as a critical factor in positive quality improvement results. Interviewed for the Times Educational Supplement (TES, Nov. 14 1997, p.8), Elisabeth Sharp, an Education Officer on secondment to HMI states “ The only people who can raise standards are people in the classroom, and unless they see that self evaluation affects their pupils, it will not be worth anything.” Such views are widely expressed in the media and are featured in HMI input to conferences and events. However, views expressed by others, notably Trade Union representatives, focus on the aspects of increased teacher workload and stress. As Ian Valentine, a leading member of the Headteachers Association explained in TES (TES, 21 March 1997, p.2) “...teaching was...incomparably better than in 1979, but workload and stress on teachers had increased considerably”. This view is widely supported through letters and articles in the education press.

This work in schools was also supported through two major national initiatives. The Quality Initiative in Scottish Schools has been an initiative that has developed and driven the strategy for improvement. Within ‘Raising Standards –

Setting Targets' (SOEID, 1999), Douglas Osler HMSCI states "A school's targets are not an end in themselves. Rather, they should promote a specific focus and greater rigour in the process of self evaluation and planning for improvement..." This has been supported by a major injection of funding through The Excellence Fund. In the three years 1999 – 2001 a total of £390 millions was injected to support improvement. This blend of strategy, focus on staff development and additional funding appear to be central in progressing a national development activity.

4.6.4 Key messages arising from these comparisons and reflective opinion

The Scottish Higher Education system is an unusual model. There is strong evidence to suggest that individuality, unique provision and autonomy are respected and valued. Therefore, the use of PIs (even internal to the institution) is not common practice. PI and benchmark information looking at efficiency is also fairly marginal. The model of peer review to support quality improvement seems central, with a broad rejection of the value of comparative measurement. However, there is a developing national concern that standard approaches and PI information has a value. This tension has yet to be resolved, and is likely to lead to imminent change. It is difficult to draw direct lessons from this comparative work.

The Health Sector has indeed matured, historically with a highly 'professional' and individual model of improving quality. The work of the National Institute for Clinical Excellence is impressive. However, their claim to move from institution centred to patient centred work does not, in my opinion, stand up to scrutiny. Although the shift is clearly away from institutions, the focus is stronger on geographical areas, illnesses and drugs than on patients. The efforts to create and use PI information to identify good practice is evident, and the information is well publicised using the internet. This is a lesson to be taken forward in the later stages of this study.

Scottish Schools have an increasing similarity with colleges. The self evaluation models are similar. The influence of HMI and Scottish Executive policies pervade both sectors. The reaction of many staff and teaching unions to the publication of PI information in standard tables is negative, with consistent suggestions that the information needs informed interpretation to be useful. This concern about openly public publication carries a lesson for FE. The positive reaction of many groups of staff when self evaluation is used for quality improvement within a school is encouraging, suggesting that this is not unique to FE. There is little new or surprising in this comparison, but it does give a greater confidence in the approaches being adopted in FE.

Key points arising from section 4.6

- Higher Education has not embraced benchmarking as a central improvement mechanism at an operational level.
- Recent studies suggest that benchmarking in HE may soon become more significant.
- The PI model for the Health Service is a more mature and sophisticated model.
- The school sector is beginning to report constructive use of self evaluation.
- The staff development support for self evaluation in schools is reported as central to its success.
- Principles for the further development of a (school) PI model have already been established.

In terms of the research objectives, this section raises the following issues.

- There is evidence to support the improvement sought in the use of PIs within research questions 2 and 3 available from other sectors
- The principles established for PI development will be useful in informing research questions 4 and 5 specifically
- The other sectors compared do bring some insight, but there is little evidence of confidence that any sector has a complete, robust and well developed model that is strong enough to use as a template for other sectors.

4.7 Conclusions from literature review

It is clear that there would be a benefit in having a robust theoretical model that consistently described the concept of benchmarking. However, this is currently not the case. There is reasonable consistency in definition when the recent literature of quality is used as the prime source. In spite of the differing models outlined in the literature, there are common threads. The common threads are based on the applications and use of PI and benchmarking data. The early literature concentrated on private sector activity and large corporations. This did not translate easily to the public sector in the early work, as the concepts of competition and comparison did not rest easily with public sector activity.

A major difficulty in defining and describing the key concepts is the general observation that PIs have a number of uses and applications. By looking at the common uses and applications, these ideas could be pulled together to provide a model framework to allow reasonable comparisons of the literature. On the basis of pulling together key ideas from the literature, the following simple model can be developed.

The key functions of benchmarking appear to be:

- setting standards and targets for internal comparison (across sections and across years);
- identifying 'high quality' performance to source good practices;
- ensuring outcomes are reported which indicate value for money; and
- providing evidence of impact and change resulting from the provision of a service.

In addition, a sound theoretical model, which reflected the key literature, would have to consider:

- the performance indicators used (reliability, validity, ease of collection and measurement); and
- the process of their use (staff development, team application, action planning and target setting).

5 Review of related quality development activities in IT

5.1 Context of the work

The earlier literature review on benchmarking and PIs looked at their development and application in a wide context. This included the historical development of the related management theories, the use of benchmarks and PIs in other sectors and other countries, and a wide range of educational benchmarks and PIs. Some key lessons from this work are that the literature is relatively new, embedded in management theory from the industrial revolution, and only clearly recognisable in the literature from the early 1980s. There is a wide range of definitions of benchmarks and PIs, however there are a number of consistent strands in the literature in determining the purpose and use of PIs. The use of PIs to support quality in academic standards in Scottish FE initially emerged in 1985, and has changed considerably until the present day.

To extend this review to cover specific areas of college support requires an additional appraisal. Where comparisons of measurement in academic performance may benefit from comparisons with, for example, American Community Colleges, benchmarks or PIs for IT support may benefit from comparisons of IT support in other industries. In addition, an appraisal of more specialised or technical literature may provide a greater insight to useful experience and theoretical approaches. This more specialised appraisal extends the initial literature review in this way.

The work in this area is required to address the issues in the five core questions in this study, particularly questions 4 and 5. “What can the literature tell us about developing quality standards for IT support?” and “Can useful quality improvement mechanisms for IT support standards be modelled, developed and tested?” The structured work will help build the concepts, ideas, information and theories that will be useful in creating a broad conceptual model.

This section outlines the continuing activities of current research and development work in the FE sector on quality in IT support. The earlier work looked at the broad and long term development of quality, whereas, this looks with more depth at one specific area of work. The reason for looking at one area with more depth follows from the gaps identified in the broad research and the gaps identified within the fieldwork. The development of standards such as SQMS was an essential building block of quality improvement using benchmarking and PIs. Therefore, looking at one area where there have been no standards requires a more in depth review of the literature, and will underpin further work in the development of quality improvement measures within colleges.

Earlier work by SFEU (1999) identified issues for quality improvement in taking forward the self evaluation model used in FE and seeking clarification and enhancement of the model through the development and implementation of robust PIs. The earlier phases of the work identified difficulties with the definitions, understanding and use of PIs within the current quality framework. The quality framework for FE published by HMI covers two specific areas, Teaching & Learning and Management. This further phase of activity and research looks at one key support area of college functioning where there are no published quality assurance frameworks or tools, the area of IT support.

Views on the further development of self evaluation are reflected in policy documentation from the Scottish Executive and funding allocation from the SFEFC. In addition, this area has been identified as an important area for development by the FEQIF. These points of reference will be established in a clearer way within the review of the initial literature (see section 5.4.1).

This section summarises key lessons from an initial review of literature on IT and outlines the planned fieldwork to establish self evaluation tools for IT

support. The information and materials resulting from the work will follow the general approach and style of the self evaluation materials used by HMI and the colleges. This is important to allow the early application of the results.

Key points arising from section 5.1

- In areas such as IT, the work is influenced by the use of standards such as SQMS in the wider management of college functions, but no specific standards are available.
- The research to underpin this development should extend further than a review of literature, and should attempt to gain insights from comparisons with other sectors.
- A more detailed examination of specialist literature in IT may help develop a well founded model for supporting self evaluation

In terms of the research objectives, this section raises the following issues.

- There is a view here suggesting that for research questions 4 and 5, a wider set of comparisons and broader based literature review than simple FE comparisons may help produce greater insight into the improved use of IT.

5.2 Scope of the work

Within this work, the support services for broad use of IT in the FE working environment will be examined, including all teaching and learning, management and administrative applications. This will encompass a full range of descriptions of technology in common use.

There are a number of terms, often summarised in initials, used to describe various groupings of technology support. For the purposes of this study, these terms will be defined using the following groupings that are well established and broadly understood in the FE community. “Information Technology” (IT) is used to describe the broad range of computer and network supported activity both in teaching and administrative functions. “Information and Communications Technology” (ICT) is a more specific description often used to encompass electronic data storage and communications equipment such as computers and networks, but this would also include video-conferencing equipment, videos and telephones. The other common phrase to group such technologies is “Information, Communications and Learning Technologies” (ICLT). ICLT includes the technologies outlined in the other groupings, but also includes learning aids such as LCD projectors and electronic books.

For the purposes of this study, the generic term of IT support reasonably describes what the study aims to address. The whole range of technologies for all college functions fall within the scope of this study and IT support is generally accepted as a fair, appropriate and widely understood description. It is, however, important to reflect that the literature and common use often apply differing terms, and will often focus on one specific grouping of technologies. Where all this literature will be of interest, it is important to recognise that the specific scope of each document or piece of work may be limited, and that the definitions used need to be clear for useful lessons to be learned.

Key points arising from section 5.2

- The wider application of IT for college support in administration, business functions and academic support will be examined.

In terms of the research objectives, this section raises the following issues.

- The literature reviewed and comparisons made within research questions 4 and 5 will have to take account of the varying definitions and scope of the terms used in grouping aspects of technology together.

5.3 Key questions addressed within this research

Within the research, a number of questions are being examined following on from those in the initial and wider research (hence questions 4 and 5).

- 4 What can the literature tell us about developing quality standards for IT support?
- 5 Can useful quality improvement mechanisms for IT support standards be modelled, developed and tested?

This section outlines the planned work for addressing these questions. It will also provide an initial information base as this research will underpin the further scope and processes of developing tools to support quality improvement in this area.

Key point arising from section 5.3

Two further research questions on IT have been determined through the initial work.

5.4 Government policy drivers

5.4.1 Government policy

The key government agencies currently influencing and directing Scottish FE are the SFEFC and the Scottish Executive. The Scottish Executive takes its policy direction from the Minister, this in turn being implemented by SFEFC. At the time of the study, the most recent guidance from the Scottish Executive relating to IT services in the FE sector in Scotland was found in *Further Education: Guidance for Funding for 2001-02*, sent by the Minister for Enterprise and Lifelong Learning, Wendy Alexander, to the SFEFC in February 2001 (Scottish Executive 2001).

I wish the [Scottish Further Education Funding] Council to continue to treat as a top priority the refinement and implementation of its ICT strategy for the FE sector. People need the skills to help Scotland to create, learn and connect faster, so that we compare and compete with the best in the global economy. In line with the conclusions of the Knowledge Economy Task Force I look to the Council to promote the concept of ICT pervasiveness, and to make it a reality.

This direction from the lead Minister, which goes on to identify £28m of additional funding, clearly illustrates the belief in the strategic significance of the development and use of IT. This direction builds on many earlier and significant policy developments from the Scottish Office (the predecessor government authority to the Scottish Executive). Two of the most important of these policy developments were the Knowledge Economy Task Force (KETF) in 1999 and the National Grid for Learning (NGfL) in 1997.

5.4.2 The KETF

The KETF, chaired by Lord MacDonald, deliberated and reported in 1999 (The Scottish Office, 1999). It identified IT as being crucial to the successful commercialisation of scientific and technological innovation in Scotland, both

as a facility and as a product. The report also noted the need to develop the Scottish skillbase in IT to meet the demands that these changes would put upon the wider labour market, hence the need to encourage lifelong learning with exposure to IT as a central element. The need for the Scottish workforce to adopt IT as a core skill was also identified in curricular reports by Professor Howie (The Scottish Office, 1994) for non-advanced study and Lord Dearing (Higher Education Funding Council for England 1997) for advanced study. Both the Howie report and the Dearing report stimulated further policy discussion and debate, and underpinned further publications and conferences. Examples of this, such as *IT and Dearing* (Beetham, 1997), talk in general terms of growth and pervasiveness, assuming extended exposure to IT for students as inevitable, and a necessary feature of planning.

This has influenced Scottish Executive planning and policy frameworks for the FE sector ever since, recognising the central importance of the familiarisation with technology in learning. Recent approaches taken by the Scottish Executive to developing the FE sector (characterised by ‘ring fenced funding’) are centred around reconciling the needs of individual learners to develop their potential and the requirements of an economy driven by policy to be transformed from a manufacturing base to a service and knowledge base. Labour markets reports, such as Scottish Labour Market Intelligence Unit (2001) and the Construction Industry Training Board Forecast (2001) consistently outline the need for workers to be IT literate in a number of employment sectors.

5.4.3 The NGfL

The NGfL concept was outlined in a consultation document in 1997 which aimed to provide the framework for: the sharing of best practice; the easy access by educators and learners to online resources; and assisting teaching staff in keeping up to date with advances in teaching technologies. The “learning grid” has grown since 1998 from a small cluster of web pages to over 5,000 hosted pages and 300,000 pages of indexed content. NGfL is a UK

initiative, but has a Scottish theme by entering the site through www.ngflscotland.gov.uk , allowing links to be made with clearer relevance to the Scottish curriculum and the Scottish infrastructure.

Although the NGfL was a concept intended to embrace schools and FE, it is widely regarded as a resource for schools with little content of relevance to FE. The historical position of schools in the late 90s of relatively low technology, teaching priorities focussed on introductory work, little access to networks (beyond simple LAN networks based in one room) and limited internet access prioritised a different set of needs to that of FE. In addition, the high prevalence of Apple Mac computers in schools served to further differentiate the needs for training and software as the FE sector was almost entirely IBM Compatible PC based, with extensive access to the internet. The commercial contributors to NGfL were also aware that there are ten times more school staff than college staff as potential customers, with a broad uniformity in their curriculum content and materials, hence the tendency to prioritise the preparation of products and services for this larger and more homogenous market. These views are widely expressed in the literature, and can be recognised easily through perusal of the NGfL website.

5.4.4 Key messages arising from this context and reflective opinion

It is clear that over recent time, political opinion and major funded programmes have viewed technology as an essential building block of economic success. The political philosophy and major initiatives are often built upon a foundation of philosophy and vision, rather than a strong evidence base. To some extent, this is an essential approach as new innovative concepts are, a priori, always untested. However, there appears to be a striking weakness in the theory building model of policy that ignores theory testing entirely.

The approach adopted could be characterised by the criticism often expressed as ‘technology is the answer, now what’s the question’. The ‘question’ in this

instance is about flexible and efficient learning and economic growth. There is a wealth of research and experience in these areas which is only applied in a limited way. By way of example, Open University has worked with what appears to be some considerable success over decades. Their approach (discussed further in section 6.4.1) using a balance of ‘old’ and ‘new’ technologies does not seem to feature to any great extent in the policy papers or briefing material related to these key national initiatives.

There also appears to be an important imbalance between the political rhetoric of change and the purpose of change (economic improvement) and the respective balance of spending. Reports underpinning programmes such as KETF and NGfL consistently talk of an economy struggling to train and provide additional skilled technician level employees, highlighting both the need for high schools to lead to further training and the relative over-supply of graduates. Yet, relative spend in FE to drive technology (when compared with school spend on NGfL or HE spend on JISC) is small. This puts FE in a position where response to policy and key initiatives is primarily determined by available funding yet the model that determines the funding appears to have some fundamental weaknesses.

Key points arising from section 5.4

- The key policy drivers for FE in this area come from the Scottish Executive through SFEFC.
- Wider policy initiative such as the KETF and NGfL have an influence on FE development.

In terms of the research objectives, this section raises the following issues.

- There is a contribution to be made to research questions 4 and 5 by considering the wider political and policy initiatives
- There is, however, a basis for initiatives that may not be built around evidence based policy making, hence the outputs may be of limited value to this study.

5.5 International context

5.5.1 Comparison with American Community Colleges

International institutions have similarly recognised the potential of IT. The American Association of Community Colleges (AACC) and the League for Innovation have supported shared information and development in the USA in the area of IT in vocational education. This information can be readily accessed through the web, the AACC website residing at <http://www.aacc.nch.edu/> and the League for Innovation at <http://www.league.org/>. Indeed, the League for Innovation was established primarily to share and develop thinking in the extended use and application of technology. The websites of these organisations provide strong evidence of the strategic value and importance of technology. Both run major conference programmes with IT themes, routinely attracting over 2,000 delegates.

One institution in particular has featured in the AACC events as demonstrating high levels of good practice in the use of IT, that is Miami Dade Community College, one of the largest colleges in America. The author has visited Miami Dade, and access was gained to the IT plans and strategies. These documents are now available through the web (www.mdcc.edu), and demonstrate a view of the potential to engage with IT. The college publish Strategic Priorities identifying areas of major importance to the college, and the priorities clearly outline the institutional view of the importance of IT

(<http://www.mdcc.edu/ctc2000/CTCTechPlan000705.html> p7).

To remain competitive the College must continually improve the quantity, quality, and scope of access that students have to technology resources. The consolidation of computers to designated public access areas will enable the College to focus both up-to-date hardware /software and technical support for students to the areas where it will be most greatly utilized. The

same public access computers should function as a portal providing students with access to College services such as registration plus the information services, multimedia, and software needed for their courses. Additionally plans should be put into place to determine the most effective way to deliver these same services to the disabled user and the user working in an off-campus environment.

This is one of six Strategic Priorities reflecting the confidence that IT is central to the delivery of college services, and that updating and extending IT will be an essential concern of the college.

5.5.2 Key messages arising from this comparison and reflective opinion

The American Community College system is very well resourced, with considerable investment in management time. It is extremely unusual to have any management post from middle management/Head of Department up in the structure without a doctorate, the EdD. being the most common qualification. This has led to an extremely well researched and resourced model of IT development. Their work, particularly that of Miami Dade, does give a confidence in the evidence based policy in a context similar to that of Scottish Colleges. Their lessons learned, therefore, are likely to be both useful and influential.

This information inspires some confidence that the political vision (expressed in section 5.4) can be backed by some relevant evidence based research and experience internationally. The observation that the American colleges are following similar lines to Scotland confirm that our investment and approaches may be helpful in reflecting a reasoned response to international competitiveness. The similarities in approach, supported by relatively high investment also suggest that useful lessons and insights might be gained from

evaluating their work and in sharing our ideas with them building on their experience.

Key points arising from section 5.5

- One useful international comparison is that of the American Community Colleges.
- Sharing developing thinking with a lead American Community College is likely to bring an informed and experienced perspective to the study.

In terms of the research objectives, this section raises the following issue.

- There is a contribution to research question 4 arising directly from this comparison.

6 Outline of planned research in IT standards

6.1 Project background and rationale

ICT has been viewed by colleges as an area of rapid development, and an area of opportunity. This view has also been reflected in the publications and views expressed by key strategic partners. These partners cover the wide strategic contexts such as the political arena, funding authorities, educational bodies and international providers of vocational education. The work within the previous sections of this study highlights the benefits and development of benchmarks and PIs in supporting quality. Therefore, the fieldwork worked to apply the theoretical approach to obtain the quality enhancement benefits in the support service area of college activity.

There is a great interest in the area of quality in learning and teaching using IT. This is not the area for this study. The specific reason for that is that the current quality assurance and improvement mechanisms already cover learning and teaching. In addition, there is a specific purpose in this study to extend quality improvement mechanisms wider than the core function of learning and teaching, and broadly into the area of support activities. In the questions addressed by the study, the last two “What can the literature tell us about developing quality standards for IT support?” and “Can useful quality improvement mechanisms for IT support standards be modelled, developed and tested?” scope this work specifically. Much of the IT related work in colleges and the literature surrounding that work has a learning and teaching focus, so this featured in the investigative activity. However, ideas and conclusions will be drawn from this only where there is a relevance to the IT support needs, and the development of standards in this area.

In November 2000, the SFEFC invited project bids for the development of support standards (SFEFC Circular FE/58/2000). SFEFC allocated £100,000,

and sought bids from all colleges, proposing to fund up to five consortia bids. The research within this review is linked to this funding, working within the only successful bid to this fund.

Key points arising from section 6.1

- The IT research work was supported by SFEFC funding.

In terms of the research objectives, this section raises the following issue

- A mechanism was established to fund and raise the profile of this study in pursuing research questions 4 and 5.

6.2 Purpose of the fieldwork with colleges

The study reflects two parallel trends: the growing practice of using IT to deliver and support vocational education; and, the sector position that self evaluation is the principal building block for quality improvement, extending into more aspects of college functioning. The SFEFC have consistently supported the idea of extending self evaluation to IT support, and were aware that the standards developed by HMI and in use at 1999/2000 did not cover IT planning, delivery or support activities.

Glenrothes College had been established for some time as a college strong in pioneering new approaches in quality development, and had developed a simple “self evaluation” model for IT. The Senior Assistant Principal led this work within Glenrothes. His prior experience in working on national self-evaluation standards as an HMI, and his link as a steering group member of the FE Quality Improvement Forum helped raise general awareness of the initial work. When SFEFC called for bids to develop national standards for IT services, the author worked with Glenrothes College to bring together a consortium of six colleges to develop and deliver a project based on this bid. The prime purpose of the project was to take current good practice in self evaluation, and to extend it to IT support.

The first draft standards developed for use in Glenrothes College would be taken and applied in other colleges. A group of three colleges would initially apply the standards, and provide structured feedback on the process and suggestions for improvement. These first revisions would be applied, and a second set of three colleges would apply the revised standards, and again provide structured feedback for enhancing and improving the standards and the application. The fully revised standards would be subject to scrutiny and discussion by an expert focus group drawn from the FE Quality Improvement Forum. This development and peer review process would be used with the literature review and

international input to inform new national standards and produce support materials.

Key points arising from section 6.2

- The purpose of the fieldwork was to extend self evaluation using standards to areas of college functioning beyond academic teaching.
- The fieldwork would take drafts of standards developed initially by Glenrothes College and test and adjust the standards to give them a wider use

In terms of the research objectives, this section raises the following issues.

- For research question 5, it clarifies the position that standards can be developed and initiates a process for testing them

6.3 The project plan

The key steps are summarised here, breaking the project into planned stages of delivery.

Stage 1 Literature Review By February 2001

A Steering Group was established with representation from each of the 6 collaborative colleges. The group was responsible for identifying best practice across the UK Further Education sector and initiating an initial literature review identified key texts and research in this area. This was not to be a detailed and extensive aspect of this work, but helped establish a wider information base linked to recent research and practice. Study visits to identify best practice institutions were to be considered and planned.

Stage 2 Develop Initial Standards and Processes By April 2001

A Writing Team was established to build on and refine the initial standards developed by Glenrothes College, Elmwood College and Dundee College, taking cognisance of research findings and quality standards used for college review. An initial set of quality standards documentation was produced for IT support. From this work, staff development activities were identified and established to raise awareness of self evaluation, generate understanding of the developed standards, and acknowledge the identified processes required for evaluation.

Stage 3 Piloting Activities By May 2001

An initial self evaluation pilot was established whereby 3 identified colleges would undertake self evaluation of IT services using the first draft standards and processes. The Steering Group and Writing Team evaluated the results and experiences of college teams participating in this activity. Evaluation outcomes would be checked by the Steering Group to support consistency of judgement. Standards and processes were further developed in line with the initial findings.

Following on from the above activities, the other 3 partner colleges undertook self-evaluation of their IT services utilising the redrafted standards and processes. The Steering Group and Writing Group would evaluate the outcomes of this stage.

Stage 4 Finalising Standards and Processes By July 2001

The IT Standards and the self evaluation processes and guidelines were redrafted taking into account the experiences and findings of the colleges working with the initial standards and processes. Grade illustrations were developed based on the initial use of the draft standards. The redrafted documentation were forwarded to the FE Quality Improvement Forum Steering Group for evaluation and feedback. The Steering Group supported by SFEU established a focus group with a broadly representative spread of Scottish colleges. In addition, international input through study visits and meetings was considered at this stage. Outcomes of all of this activity were taken into account, and the writers produced a final set of quality standards together with a comprehensive set of processes and guidelines to be used in conjunction with the standards.

Stage 5 Dissemination of Project By mid August 2001

The Steering Group supported by the FE Quality Improvement Forum Steering Group and SFEU provided a national dissemination event at SFEU in mid August. The aim of the event was to share the processes and outcomes of the project to the FE sector and other interested parties.

Key points arising from section 6.3

- A plan for the fieldwork was developed and shared with key partners.

In terms of the research objectives, this section raises the following issue.

- The plan for the implementation of the work for research question 5 has been established

6.4 Initial IT literature review

6.4.1 The historic development through the IT in education literature

As an area of academic study, 'IT' has a relatively short period of literature. The use of technology, or technology based approaches in education can be examined through some of the early thinking on teaching and learning. The thinking underpinning developments in teaching and learning in the middle of the last century was based on the idea of mechanistic approaches to learning, followed by the implementation of machine assisted learning. It is a difficult task (and somewhat arbitrary) to pick a starting point for this summary, as mechanical aids go back to the ancient Greeks and the abacus. However, most people would accept that the major impact of technology on learning started around the 1960s following the earliest applications of computers.

The earliest IT applications to be applied widely within further education were under the heading of "Programmed Learning". The theory underpinning this approach was embedded with the psychological school of behaviourism, developed by such thinkers as Thorndike, Watson and Skinner (Eysenck, 1998). The key principles behind the use of programmed learning involved "drills", the repeated and structured study of key facts. These drills would be written, planned and structured by a tutor, but could be used at the pace of the learner. This programmed learning model had three key elements that underpin IT based learning: interactivity; individualisation; and computer mediation.

One well researched and evaluated example of programmed learning was Programmed Logic for Automatic Teacher Operations (PLATO), run as a national programme in the USA in the 1960s. The project developed 15,000 hours of content (large even by today's standards). In 1972, the mainframe was extended to take up to 1,000 learners simultaneously. This extended in 1985 (before the internet) to over 100 campuses. By 1990 the PLATO system was shut down, with CDC, the company running the service, giving the key reason

for closure being that the business model was not economic. One major lesson taken from the PLATO project was the limitations of linear learning models with no multimedia elements. This limited the practicality of “active learning”.

This idea of “active learning” pervades the newer psychological models of learning. Theorists such as Vygotsky (1978), Kolb (1984) and Rodgers (1996) consider the social and interactive aspects of learning as being central for effective learning. These well established approaches have pervaded the full range of educational and training sectors, and are widely included within teacher training programmes. This active model was developed in the domain of IT primarily through the application of relatively complex and expensive use of technology for simulations. The areas of greatest impact for simulations were in advanced specialised course, military applications and replication of classic experiments (Garson, 1987). Many of the interactive features and “high production values” (high quality graphics and good quality sound effects) could, for many years, be more readily found in games technology rather than educational technology. More recently, with high production values being easier to attain with cheap technology and more widely available software, these production values are beginning to appear more often in educational applications. The value of extended interactivity and the entertainment element of education (often described in the USA as “edutainment”) were supported by learning theory.

This early thinking has been replaced substantially by two schools of thought as the technical potential of IT became more apparent, the “Revolutionary” and the “Evolutionary”. In the first, IT is viewed as an extreme rethinking of the whole approach to learning and communications. This radical viewpoint is characterised by organisations such as EDUCAUSE as outlined by Ehrmann (1999). Ehrmann is viewed by many as a leader in the field of the educational application of ICT, he is a prolific author and has been recognised as first citing and defining the concept of “distributed learning” in 1987. He describes

technology as setting the scene for a “third revolution”. The first revolution (the Reading-Writing revolution) was when society moved from direct and personal oral contact to teach through dialogue. The second revolution (the “Campus” revolution) was when society moved to marshal teachers and learners together creating communities to exchange ideas and learning. The third revolution relates to the notion of geographically disparate tutors and learners, with time and location being no substantive barrier to interactivity.

In describing these revolutions, Ehrmann states (1999)

Each revolution has radically expanded and redefined the distributed learning environment of the day, thus enhancing both access and quality (while also harming them in several ways). All three revolutions used their technologies to help more scholars teach and more students learn, enable new kinds of scholarship and specialization, alter the relationship of scholars with the larger society, increase the uniformity and diversity of teaching resources and change the character of academic conversation.

(Ehrmann, 1999, p.8)

This description and language demonstrate the scale and nature of the impact that Ehrmann anticipates through the wider use of technology in education. This view therefore should promote a model of evaluation which includes a reflection upon large scale impact, not simply the efficient delivery of traditional teaching and learning.

The second school of thought could be described as “Evolutionary”, where technology is seen as making an incremental but fast impact on teaching and learning. In this school of thought, the learning aspirations of students can be met in many ways, with technological support being one aspect in a wide range of tools. There is also a predominant view that technological “tools” are still developmental and carry many problems of implementation. These writers, such as Cardenas (1998) and Mingle and Gold (1996) have a strong belief that the

impact of fast changing technology may be limited in what is essentially an interpersonal arena. Although they accept a potential to have great impact, issues of practicality and cost underpin their view that the actual impact may be constrained to important, but not revolutionary proportions. The potential of technology in education started to feature as a policy matter with many national governments in the late 1980s. The high cost of software and hardware encouraged projects to be developed on a national basis. These projects often had a strong political element, where the use of new technology and the high cost were accepted as necessary to develop new and innovative approaches. One such project was the Open University. The range of “new” technologies used within this project was wide, including national TV broadcast, audiotapes and software. This software was developed for use on a personal computer being pioneered for educational use, the “BBC”. This was one of the UKs first innovative national projects and the history of the national development of flexible learning in education in the UK can be substantially plotted from this time using national projects as the key milestones. This is the approach adopted in the next section.

6.4.2 Key IT Programmes and Initiatives

Within this section, three key national projects (from many) that were put in place to make a strategic impact on the development of educational technology will be examined. These projects were selected as they have had a fixed lifespan, clear funding, and often, a clear remit and purpose. They are included as they have each created a literature, primarily of a (large) case study nature that has informed or influenced the following stages of policy and practice. These key programmes were also well funded and regularly cited in the political, academic and professional literature. Each section outlines the initiative, and gives a summary of the contribution of ideas from the project.

- **Computers in Teaching Initiative (CTI).**
- **Teaching and Learning Technology Support Network (TLTSN).**
- **Quality in Information & Learning Technology (QuILT).**

6.4.3 Computers in Teaching Initiative

The CTI was established in 1989. The funding has come from three national funding councils and one government department: the Higher Education Funding Council; the Scottish Higher Education Funding Council; the Higher Education Funding Council of Wales; and the Department of Education of Northern Ireland. The CTI project had a budget of £1.25m per year. The model was based upon subject based centres (24 by the end of the project). Each centre was located within a Higher Education Institution, and had four principle aims.

- a. **Advise academic departments on the availability and suitability of computer learning within the context of institutional guidelines.**
- b. **Provide detailed information on the materials available in a subject, a resource guide and regular reviews of teaching materials.**
- c. **Visit departments at regular intervals or hold workshops for departmental staff.**
- d. **Assist in disseminating products arising from funding bodies Teaching and Learning Technologies Programme.**

CTI centres conducted evaluations on the basis of quality criteria they developed themselves. No uniform model was adopted, although some themes were evident. In the evaluation report, the reasons for this approach were explained as they described the feedback on standards in their website -

A powerful lever was thought to be networks that provided an institution with up-to-date information on what was being done elsewhere in the sector, and what was emerging as good practice. ...By contrast, however, kitemarking of CAL products by a central agency was not supported because it was felt to be too rigid; materials are used in many different ways

and for different purposes.

(www.hefce.ac.uk/Pubs/HEFCE/1998/98_47.htm , p13).

This less formal model of sharing what other practitioners recommended was the central plank of evaluation of effectiveness.

From this project, it is clear that within the HE environment, the notion of “professional judgement” is a central element of evaluation. This is consistent with the tradition of “peer review” in research and publication that has been the embedded practice in HE for many years. However, the lack of user (student) feedback as a central element of the review process suggests a review model that is only partly consistent with the self evaluation model used in FE. The key evaluation criteria applied to technology and the use of IT appears to be based on the individual opinions of practitioners. Where this may appear less rigorous than would be anticipated from a large scale national project, it would be a similar approach to that applied to any new publication or teaching and learning methodology in HE.

6.4.4 Teaching and Learning Technology Support Network

This programme was established in January 1996, funded for two years. There were nine regional centres established, with a total central budget of £400,000 per year supplemented by contributions from the host centre. The aims of TLTSN are

- a Apply the experience of the institutional projects in the TLTP.
- b Support and encourage UK higher education institutions seeking to integrate technology into mainstream teaching and learning.
- c enhance the quality of provision for student learning.

This final aim is important, as it is specifying an enhancement of quality. Most other projects will have loose references to quality or implied objectives or aims that allude to quality, however, for TLTSN, quality is specifically stated in its remit.

This project was relatively small scale, and suffered from problems of implementation. The approach adopted in most centres was to try to provide advice to senior managers on appropriate strategies. The general difficulties in encouraging institutions through to wide implementation limited the impact, hence, the ideas behind evaluation were not fully tested. Feedback from staff was again a central criterion for evaluation of impact. This provided an operational perspective that limits the value of the work. To exemplify this, only one of the nine centres developed and tried to apply cost-benefits criteria to the extended implementation of IT.

One difficulty behind the judgement of the impact of this project is the operational nature of the activity. This national project (as with many others) appears to be “large scale operational” rather than “strategic”. The review of experience and evaluations reflected upon nine distinct models of operation, comparing and contrasting activities. Very little attention is paid to the impact of the work, or the lessons to be drawn from the totality of the experiences.

The project materials make little real contribution to establishing evaluation standards for IT, as a model based upon professional opinion and user feedback is used to judge good practice. The materials do, however, demonstrate the need to set clear evaluation criteria at the start of the project and to apply them uniformly to gain wide-ranging and strategic information to inform future developments.

6.4.5 QuILT

The QuILT initiative was one of the first “national” IT initiative based in FE, with two strands running, one in England, one in Wales. There was substantial funding made available over three years. Total funding was approximately £4m, with colleges making top-up contributions to projects that caused difficulty of quantification. The project was led by the Further Education Development

Agency (FEDA), who essentially co-ordinated a number of college based case study projects. The project stemmed from the conclusions of the “Higginson Committee” (FEFC, 1996) which promoted the notion that staff development in IT is an absolute priority for FE.

The project had a three aims, as outlined on the website

www.learningtechnologies.ac.uk/quilt_an_overview_of_quilt.htm . These were

- raising staff awareness of and commitment to the possibilities presented by modern learning technologies;
- enhancing the technical capabilities of staff in the use of these techniques; and
- focusing on the teaching and management of learning, whereby electronic materials can be fully integrated with student programmes.

A full judgement of achievement of these aims is difficult given the small scale project based model adopted.

The evaluations from the steering group and the project can be summarised as concluding that: awareness and skills were raised; skills were enhanced; and new and useful models of delivery were developed. However, there is no evidence presented or judgement made regarding the value for money of the whole project. The institutional projects involved over 50,000 FE staff, and had wide publicity and promotion. Crucially, the lack of clarity in the specified outcomes has made robust and full evaluation difficult. The new Learning and Skills Development Agency (formerly FEDA) do, however, use the specific project outcomes and evaluations to underpin their continued training and project development programme.

6.4.6 Key messages arising from these reviews and reflective opinion

One difficulty in studying any work involving the use of new technologies is where to start in the review of literature. The focus of this study is IT support

services, yet without exploring what the IT is intended to do, a full picture might not emerge. The early literature on the use of technology in learning is impressive, identifying key principles such as individualisation and interactivity that still underpin and pervade IT supported education.

The philosophies proposed by the later writers on the potential impact of IT being revolutionary (as opposed to evolutionary) is not so much a substantial difference in belief, rather is about the perspective on timescale. In essence, is a great impact on practice over a 20 year period reflective of normal progress or radical change? The key difference arising from this work is the faith and confidence regarding investment and change at a rapid pace with great confidence in the philosophy as opposed to the more pragmatic view of staged investment based on evidence of success. In this regard, this study and the findings support the evolutionary approach, that is, evaluate and seek evidence of success before major and potentially dysfunctional commitments.

The three initiatives outlined do provide valuable insights, but these might not be the insights they intended to offer. Although different, they all have some characteristics, in hindsight, which provide useful lessons. There are four key areas that can be considered: the changing pace of technology; a full evaluation of key principles; the limited view that technology is the only solution; and the limited scope of the application of technology. These areas are more fully explained below.

The first is that they have all embarked on programmes of work when the pace of change in technology has not been fully recognised. The change in speed and power of computers has changed the whole nature from a mathematical and text based medium to a highly graphical medium. Most evaluative work in the initiatives describes computers in a relatively fixed way. In addition, wider internet access and the proliferation of home use is almost entirely ignored

within their published literatures. This is like writing about public transport whilst failing to recognise that people have their own cars.

A second lesson is that the programmes of work do not appear to be fully evaluated in terms of first principles. These programmes all review aspects of their work, but the limited context, technology used and case study styles make it difficult to learn lessons that can be applied in a wider context. This is particularly disappointing given the many millions of pounds invested, and currently being re-invested in this area of work.

A third lesson is that work designed to follow the approach that 'technology is the answer, now what's the question' is limited in its scope. None of these projects appear to be robust in their comparisons, or look seriously at alternatives. There are many potential approaches to deal with individualised work, increased interactivity and active learning. However, comparisons of the efficacy, value, cost effectiveness, sustainability or comparative impact do not feature in the work.

The fourth lesson is the weakness of the approach of limiting the work to teaching and learning activity alone. The values, mores, culture and traditions of the academic institutions separated out teaching and learning from other functional areas, such as guidance and administration. This led to ignoring important elements of the student experience such as guidance and tracking student progress. As the recent work on Managed Learning Environments (MLEs) indicates, this is an area of some potential in the delivery of a more effective learning experience.

All of the three initiatives have provided a range of useful insights to this area of development. It is clear from their literature that large scale projects are needed to provide cost effective models of delivery. In addition, lessons on the

difficulties of implementation and the review and evaluation of work have been documented.

Key points arising from section 6.4

- IT has a relatively short literature, with substantial publications and major projects emerging in the 1960s.
- The literature on active learning has a relevance to the planning and use of IT in the context of education and training.
- The literature is split between the idea that technology is revolutionary, and the idea that it is evolutionary.
- There have been key national programmes on ICT in education that have developed a useful recent literature.

In terms of the research objectives, this section raises the following issues.

- Key strands have emerged to provide answers to research question 4.
- There are some fundamental ideas of approach arising from the literature that need consideration before the evaluation criteria to be used in research question 5 are established.

6.5 The key literature on IT in post compulsory education

6.5.1 Business and educational literature

The development and use of IT is no longer a marginal issue in educational practice. It is now seen as the centrepiece of future educational planning and delivery. Indeed, the implications of IT are perhaps more fundamental than for any other sector, with analysts such as Monteith (1998) suggesting that education sectors have lost their monopoly of the learning process. This, says Monteith, can cause significant problems for educational institutions where the curriculum is fixed and yet, the teaching technologies are advancing at an incredible rate.

New thinking regarding IT has gradually begun to influence educational planning and management. Expectations can easily exceed the realistic, and there is a need for constructive skepticism when incorporating new technologies in both the classroom and the operations of the institution. Tony Bates, an expert in the use of technology in university teaching, provides practical, systematic strategies for creating the new, technologically competitive academic institution (Bates, 2000). As his work concentrates on educational application, he uses the more focussed term of ICT in his writing.

Bates' work draws on recent research and best practice case studies in the field, and is relevant to FE as well as HE environments. Bates suggests strategies for winning "faculty"(teaching staff) support for teaching with technology, and advises on appropriate decision-making and evaluation mechanisms. He details the essential procedures for funding new technology-based systems, approaches to managing the technology, and monitoring its ongoing educational effectiveness. Bates retains a central focus on the user throughout, and the strength of this work is its linkage of practice and theory. This approach, uncharacteristic in the wider literature, deals with context issues of implementation and evaluation.

Bates has also published a number of papers and articles on the subject of ICT integration into Open and Distance Learning, areas in which colleges increasingly focus their efforts. As Bates explained in a paper to the Queensland Open Learning Network in 1996, the simple availability of a computer does not, of itself, promote wider learning -

The technology does promise greater learning effectiveness, more learner centred approaches, and better quality of interaction. But this promise does not necessarily lead to open learning, nor does it guarantee that technology will be used in these ways. Without careful management and design, it can lead to a widening gap in access between rich and poor, it can lead to cultural imperialism, the 'Americanization' of the curriculum, it can even lead to the destruction of public education systems by powerful multinational corporations - if we let it. (<http://www.bates.cstudies.ubc.ca/brisbane.html> p3)

This highlights a rarely voiced but important view that IT can potentially do more harm than good if not supplemented by sound pedagogy and careful implementation. Given the importance of the Social Inclusion agenda in Scotland, the problems of such approaches and the threat of IT becoming a divisive, rather than an inclusive educational development is clear.

As with many analysts of IT, Bates emphasises the need to have clear objectives and expectations from the initial stages of IT implementation onwards. The emphasis, in fact, might be said to be more on a level of quality control from the outset, rather than improvement at some later point. However, in many cases, colleges and universities have already adopted some historical and piecemeal IT equipment that grows and develops by incremental addition, and is rarely given a complete review. The school of thought characterised by Bates is one of

evaluation. In this school, educators must consistently approach IT materials through questions: is the content of the IT materials unique, and in demand? Is the quality of media production sufficiently high, with clear graphics and text? Are any sound and video elements audible and clear? Can the hardware support it, and does the software optimise the use of the functions it has available to it? Are the instructions clear and does it render a high quality of interaction with the student? Will the students need support? Is the interface easy to use? What technical support will be needed?

These questions are, to many, obvious, but Bates argues that too often asking these questions is a voluntary process without any strategic thinking to accompany it. Educational institutions must formalise such questions and make them a matter of standard process. He gives eight recommendations for ICT adaptation within educational organisations.

1. Identify key target groups and markets for on-line, multimedia education and training; develop programming for which there is a well-defined market, both in the private and public sectors.
2. Develop a clear vision for the use of telecommunications in education that include appropriate goals, target groups, and curriculum models that take into consideration the technical capabilities that can already be identified as emerging over the next 10 years.
3. Find ways to fund the development of large quantities of multimedia learning materials through partnerships between media producers, telecommunications companies and educational institutions.
4. Keep the human role in teaching by linking 'real' people with students through telecommunications, and giving them the tools to access, reconstruct and create knowledge.
5. Create new (or transform existing) curricular models that enable more negotiation between learner and teacher, to meet individual needs.

6. Develop new institutional or organisational structures built around the digital collection, storage, creation and distribution of learning materials.
7. Provide political leadership in the development of system-wide education and training networks.
8. Create a regulatory environment that provides universal access, choice and competition. (Bates, 1995, p.70)

These recommendations provide a model of strategic quality improvement and control for institutions to consider and adapt to their own needs. However, views such as these assume a large scale regulatory and funding regime will be in place that is supportive. Additionally, recommendations 6, 7 and 8 clearly assume regional, state or national decision making rather than institutional, these assumptions may not be well founded.

6.5.2 Specialist IT Literature

Much of the specialist IT literature deals with its business applications or deals with technical issues and problems difficult for the non-specialist to access.

Nevertheless, FE may learn from other areas of work in terms of effective use of IT as a pervasive facility in any organisation. Timothy Braithwaite, an American ICT specialist, is one of many analysts who have offered post mortems on the 'Millennium Bug' crisis, 'Y2k', and drawn wider conclusions about strategy, planning and implementation from that experience (Braithwaite, 2000).

Although writing about a specific eventuality that attracted considerable media and press coverage, Braithwaite's book is of wider significance. He uses 'Y2k' to demonstrate the common flaws in IT planning and implementation which made the crisis such a threat and, he argues, will continue unless a greater sense of discipline is incorporated into the plans of managers. Braithwaite argues for a holistic approach to IT development within companies, including all relevant departments in the process (Braithwaite, 1996). Too often, Braithwaite argues,

executives allow staff to be overwhelmed by the pace of technological advances, many of which, may not, in fact, be appropriate to the actual needs of that organisation. One of the worst aspects of IT “mismanagement” is the assumption that all new technology is good, and the subsequent rush to implement it can do more harm than good if this new technology is, in fact, unnecessary. Too often, he argues, it is assumed that any long-term benefits will in fact overcome short-term difficulties, particularly in environments where fast, effective results are essential.

Braithwaite makes 16 recommendations, a sequence of measures, which should, he contends, assist in the formulation of coherent IT implementation strategies. The parallels between these 16 points and the eight recommendations of Bates are clear. Not all of Braithwaite’s are applicable to FE, but the growing need for FE institutions to balance educational agendas against an increasingly commercialised working environment mean that his more detailed points on IT management are pertinent points for consideration. Braithwaite recommends that the Chief Executive or equivalent of any company which makes use of IT or is planning to, should themselves chair an IT management committee, and that overall responsibility for IT implementation and strategy be given to an executive member. Such planning groups need to assess feasibility on three levels, technical, operational and economic. Technical involves assessing whether the technology will work and, above all, can be supported. Operational involves considering how the technology will integrate into current operation processes and the preparations necessary to do so. Economic requires cold assessment of the likely outcomes in relation to the expense of setting up. This sequential assessment process should be made a matter of policy.

This thinking has influenced education. The Joint Committee on Learning and Training commissioned work reporting on the hidden costs of implementing Central Networked Learning is one example of how many of these processes are already in use by FE (Telematics in Education Research Group, 1999). However,

Braithwaite argues, the Y2k crisis showed that many companies had not applied such judgements, the result of which was the estimated £100 billion spent in the US alone trying to avert the potentially catastrophic effects of the millennium.

Braithwaite is arguing against the 'crisis management' approach, which, whilst not, in fact, favoured or actively selected, has characterised past practice. Crisis management approaches are often described in review in more acceptable phrases or strategies such as 'responsiveness', 'project management' or 'cost-benefits analysis'. Closer consideration of the literature can identify for example that cost-benefit analyses of IT systems are not always appropriate. This is because they are not cumulative and they may not be as appropriate as a wider and comprehensive economic feasibility assessment. Continuous quality assessment, nothing new to FE, is also suggested at all levels, and Braithwaite's proposals are in line with recent tendencies in the FE sector to seek to monitor IT more closely and share best practice. Braithwaite also believes in Performance Indicators, and identifies favoured examples. These are, of course, American, such as that of the Software Engineering Institute (SEI) of Carnegie Mellon University's "Capability Maturity Model" (CMM). These evaluate the use of software and technology within an organisation and rank the overall IT capability on an increasing scale of 1-5, based on standardisation of practice, efficiency and constant quality improvement.

There are five stages of maturity outlined in this model

- | | |
|------------|---|
| Initial | where practice is ad hoc, relying solely on individuals efforts and initiatives. |
| Repeatable | with basic project management tracking cost, schedule and functionality. |
| Defined | in which standardisation and documentation has been achieved. |
| Managed | in which process measures are detailed and used effectively in improving quality. |

Optimising is a stage reached where an organisation has so integrated its process assessment measures that assessment and feedback work in a continuous cycle of improvement.

Braithwaite also recommends substantial reviews of outsourcing arrangements and warns against excessive dependency. While this caveat is primarily concerned with the possible threat to an organisation's financial viability due to over-dependency, the need for colleges to undertake a more careful approach to management means that it is also a factor for FE to consider. He subsequently recommends the creation of cadres of IT specialists within organisations, designed around the essential IT needs and functions. Human Resources and Personnel policies should be tailored to meet the requirements that IT demands of the workforce. Braithwaite also advises companies who make frequent use of IT to consider an in-house centre for technological improvement, to innovate in service provision and IT related work processes. Again, parallels can be drawn with work already being done in FE and HE.

From the literature of the business sector, therefore, comes confirmation of a key message that is gradually being understood in education; that IT development is no longer an 'extra', and that the quality of IT provision is now central to the quality of all other provision.

The central message of much of the wider literature, it seems, is a consensus that there is a pressing need to find and agree upon standards of planning, management, provision and delivery of IT in a number of areas, not just education. Given the collaborative approaches favoured in FE in the present environment, it seems appropriate that best practice, new ideas, models and performance indicators be shared across colleges and perhaps across sectors where appropriate. Both colleges and businesses need to be aware of costs and overheads as a part of their IT provision. Awareness of economic viability is as necessary to colleges as it is to large corporations.

Successful planning, implementation and monitoring of IT without the engagement of those at the highest level, in any organisation, is extremely difficult. This does not remove the initiative from those nearer the point of delivery; the IT specialists and the tutors, rather it promotes the idea that links between their creative input and expertise and the top tier of decision making and management should be clearer and more direct.

6.5.2 Key messages arising from these reviews and reflective opinion

It is clear that business and educational literature and specialised IT literature have been excellent sources of information on managing change and improvement. The information here is far more practical in many ways, yet also has a clearer view of strategy when implementing change based on IT.

The wider views expressed by authors such as Bates and Braithwaite are also synthesised into principles to underpin effective implementation. It is clear that these principles have been largely unknown or ignored by many political and managerial decision makers in Scottish education.

This wider literature also signals an important issue for reflection; that learning could, through technology, be a market served outwith formal education. There are parallels here in the postal service. Ten years ago, post office unions were regularly featured in the press complaining about the growth in “junk mail” and interested in finding ways of stopping or limiting this activity, as it was undermining the key communications role of the postal service. Technology now has underpinned business and commercial communications, with ten times more e-mail sent daily than letters. Now the ‘junk mail’ is 50% of the work of the postal service, and has, in effect, kept the staff in employment and the system financially viable. Technology has allowed the business and personal communications market to be the predominant domain of telecommunications companies rather than the postal service.

This parallel could also be true of learning. Individualised, simplistic learning (such as the theory people need to know for driving tests) could leave the education market entirely. Publishers, technology companies, professional agencies or others could take learning to augment their business. Two million people, Europe wide, have enrolled on a British Computer Society course, the European Computer Driving Licence. An organisation that initially provided some information support for specialists is, suddenly and overwhelmingly, in the learning market. The views emerging from the review of literature signal this kind of trend, and market behaviour seems to be providing evidence of movement in this direction.

The key to educational institutions being central in leading, maintaining and supporting the learning market is the need for effective strategy, well implemented through first principles. This strategy must reflect lessons from technology. We would not assume lessons and ideas from the principles of financial management (such as audit procedures, asset registration, accrual and deferral, systematic and consistent work practices) to apply to HR management. Why, therefore, is IT often approached with the view that principles of educational management are appropriate. This literature demonstrates strongly, in a range of business contexts, some key principles of managing IT implementation.

Key points arising from section 6.5

- There are lessons to be drawn from business and education literature, primarily about the importance of planning and management.
- There are in the literature key issues identified for the successful adaptation of IT for use in educational organisations.
- Specialised literature provides warnings of lack of knowledge of the potential of IT, and the weakness of unjustified faith in new technology.
- Specialised literature outlines models of stages of maturity in IT use.

- The wider literature recognises a need for standards of planning and management of IT provision.

In terms of the research objectives, this section raises the following issues.

- There are clear contributions to research question 4.
- Many of the ideas identified here will underpin the work on research question 5.

6.6 The next steps

6.6.1 The literature review

From the initial literature review, it is clear that current thinking expressed in the mainly text based literature, and current practice in FE colleges are far apart. The recent literature is promoting a strategic approach, broadly evaluative, and based on established organisational and learning theory. Current practice broadly reflects the incremental and sporadic growth of provision, often based on short term initiative funding.

It is also clear from the initial work that “case study” literature and reporting is often article based or web based, very current, and often illuminates particular issues of interest. Therefore, in extending the literature review, there will be an increased focus on journal and internet based reporting. It is also clear that there is a vast literature developing to inform this work based primarily on very recent work. This suggests that a strong emphasis on lessons from the literature will be central in informing this work.

6.6.2 The fieldwork

The fieldwork element of this research will continue as outlined to provide a practical contribution to the literature, tools and mechanisms for supporting reflective practice in this area. The initial work within this paper has clearly allowed the study to progress having added some wider perspectives to the underpinning theory. In addition, the practical application and initial development of these tools will establish a link between the theory, systematic evaluation of practice, and a contribution to the vocational field.

7 The Study: Phase 1

7.1 Time Plan for Study

The literature review and understanding of the theoretical models of quality improvement have, in the previous sections of this study (see sections 4.2, 4.3, and 4.4) provided information to support a field based enquiry into the application and use of benchmarks and PIs. The fieldwork should test the general application against the stated purpose, and look at whether the application is rigorous and robust. The fieldwork must also cover a wide range of colleges with a large sample, and must be sensitive to the need to engender ownership and participation in the work and in implementing any useful findings.

This section will outline the stages and general time plan for each step of the work. The plan as outlined, highlighting the key activities in each month, was also the actual timetable for delivery of the work.

The work was done with some support from a team. The author was the lead officer in all phases of this project, and had responsibility for the design, methodology, implementation and publication of the work.

The general programme and approach follows -

February 1999 Start Phase 1

Outline work, identify and brief research team, and advise lead organisations of the work planned. Plan and run "launch" event for FE staff, using workshops to identify key issues from the sector. Identify colleges (9) for further study, asking them to volunteer and seek the required approvals for the interview and questioning work.

March 1999

Establish questions about the understanding and collection of PIs, identify staff for questioning, and pilot in two colleges. Having made adjustments to the questions and added "scenario" questions to test interpretation and understanding, apply the study questions (and "scenario" questions) programme in the 9 colleges. Collect data from SQA on pass rates. Evaluate the information from college responses in terms of evidence of use and understanding.

May/June 1999 End of Phase 1 – Start Phase 2

Collate data, publish and launch initial report. Agree further work for phase 2. Outline questions and issues to be raised with college senior managers in the Inspection Regime for Colleges (IRCOL) round of meetings to determine attitudes and interest in development of improved or additional PIs. This involved structured questions discussed with senior managers in 40 FE colleges (from a possible 47).

July 1999

Draft report on the main reasons for inconsistency in college data, the impact of pending changes in SQA awards, and outline initial proposals for the improvement of validity and reliability in PIs.

September 1999

Model improvements in PIs by revising definitions. Seek approval from Scottish Executive, HMI and Scottish Further Education Funding Council to update and revise definitions of key PIs. Seek expert feedback in testing revised "model" PIs, and assess attitudes to changes.

October 1999

Draft report that would, initially, improve validity and reliability of PIs through improved definitions, underpin the ideas for longer-term change, and suggest further work to be conducted.

November 1999

Submit report (summarised by project team) to HMI and SFEFC for further consideration. Seek agreement to adopt improved definitions, and plan sector based training.

December 1999 End Phase 2 - Start Phase 3

Extend the literature review to widen the base of information, including a "web search" for related studies. Group lessons learned from key texts and research, outlining lessons on approach, lessons from international comparison, and lessons learned from work in other sectors.

January 2000

Plan the delivery of training sessions based upon the early research and developmental work to date. This would aim to share findings, and improve practice in the collection and use of PI data. This is drawn into a guidance pack on definitions, examples of collected data, and training materials to cascade to staff.

March 2000

Complete and submit study for scrutiny.

April 2000

Deliver workshops to quality managers in the FE sector. Further refine the research to draw lessons for the longer-term development and use of PIs.

Key points arising from section 7.1

- The study is a phased project with a planned delivery period of February 1999 to April 2000.

In terms of the research objectives, this section raises the following issues.

- A clear plan has been determined to investigate research questions 1, 2 and 3 through fieldwork.

7.2 Purpose of the study

“To investigate the feasibility of using SARUs or a similar measure of unit achievement as a basis for publishing benchmarking tables, which will inform course review, self evaluation and quality improvement in FE colleges” (from specification in appendix A). The fuller project specification is attached as appendix A, which includes the specific objectives.

In generating this report, this purpose was interpreted to ensure that the results were both informative and usable in the context of FE. The movement toward a greater degree of self evaluation, and creating information sources which are more useful on a subject/course leader level were major considerations in the design of this work. However, the methodology and approach reflected the fact that there was a range of users and perspectives on the information, which results in a wide array of information being produced by this study to support quality improvement on both an operational and a strategic level.

7.2.1 Methodology and Approach

The study was conducted using a balance of methodologies reflecting the need to collect and interpret quantitative and qualitative information, and to evaluate its usefulness. This included:

- focus group work – to scope and refine the study, and determine key issues for the user group;
- structured interviews – to check perception and understanding of the current PIs;
- test questions – to check and validate interpretation and understanding of PI definitions; and
- collation and analysis of statistical data – to look for trends, patterns and possible anomalies resulting from the larger scale recording of the information.

These approaches were developed through reflection on key literature and

current practice in educational and social science research. The focus group was used, quite literally, to focus the work. The focus group comprised of a group of 14 volunteers who are all members of the FE Quality Improvement Forum. These group members are substantially managers with a responsibility for quality.

A structured questionnaire was used for discussion with the focus group to ask attendees to express a view of the most important issues in the subject area, where they felt difficulties of interpretation could apply, and what were the most significant issues in the use of PI information.

The work of established researchers such as Oppenheim (1966) and Youngman (1982) gives clear support to the best approaches to designing questions for the college based interviews. Options within the questions such as the potential to use scales in responses (such as Likert Scales) were considered. However, given the nature of the study, it was clear that semi-structured questions would elicit beliefs and opinions. For the sake of effective analysis, many closed questions were used, and, where possible, structured options were presented. More balanced methodologies would be needed to check interpretations and understanding. Hence the additional “scenario” questions were developed.

One area where the literature offers little support is on the strongest methodologies for using IT or internet based questionnaires. There is one major commercial organisation that will provide internet based support for this work, but there is no objective information available on this as a methodology. The Benchnet Organisation based on a website (www.benchnet.com) makes claims and demonstrates surveys. This would appear to be potentially a good means of testing, planning or scoping a study, but more evidence on the worth of the methodology would need to be available before it could be adopted with confidence for a scientific study. The literature on research that is relatively comprehensive and recent, such as Leedy (1996) and Isaac (1995), does not give

information on these electronic methods beyond their simple application as tools of communication.

The specification for the project was outlined by HMI initially, and discussed in outline with the FE Quality Improvement Forum Steering Group. As the specification was refined, a sub group commented on the specification and the implementation. This group of senior practitioners was influential in ensuring that the project had a focus that would support quality improvement at a practitioner level.

7.2.2 Project planning and initial activity

When the specification was agreed, a team of three project officers was seconded (part-time), reflecting the range of skills needed to deliver on the project. This was John Laird - Project Leader, Martin Dunk (Quality Manager Lauder College) - Project Officer, and Helen Ganson (Researcher SQA) - Statistician. Initially, a 'brainstorming' meeting of the project team outlined the activities, materials and questions that would need to be developed to meet the specification. The author led the process of developing and refining the interview questions, whilst considering lessons learned from training and key literature. This meeting also outlined a profile of colleges that would be broadly accepted as a reasonably representative sample of colleges for the investigative interviews.

At this first team meeting, a set of initial questions and areas of interest were identified that were then tested using two early college visits (not included in the results of the study) to scope and refine the questions. These questions were developed using the project specification as the base, and designing questions specifically to generate this information. Initial desk research was also conducted on information and information sources on PIs already available. The results of this initial research and investigation are included as Appendix B in this report.

Key points arising from section 7.2

- The study, conducted by a project team, is both a research exercise and a development project.

In terms of the research objectives, this section raises the following issues.

- Respective contributions of others were planned under the direction of the author to move forward the study on a larger scale and in a quicker timeframe in looking at the first three research questions.

7.3 Initial launch event

From this activity, an initial event was planned which launched the project to the sector. The event also asked the senior managers (within a structured workshop setting) in attendance to act as a focus group and test group to refine the questions, and seek guidance on any other questions or issues that should be investigated. Structured questions on the priorities of users of PIs were put to the workshop groups at this launch event. Further, college representatives were invited to volunteer their college for structured interviews to collect further data. A minimum of six colleges was sought, 11 volunteered (however owing to practical problems of time only nine were used). The volunteer colleges were matched against the sample profile to confirm that it was a broadly representative sample.

7.3.1 Questions and ‘Scenario Questions’

Based upon the initial work and feedback given in the focus/workshop groups at the event, a further set of ‘Scenarios’ were developed to apply in the colleges. These describe a situation and ask the participant questions of interpretation. These ‘Scenario’ questions tested whether ‘knowing’ a definition and ‘interpreting and applying’ the definition was leading to the same information being recorded and submitted to SQA and SOEID.

The questions that were defined as of value (and the ‘Scenario’ questions) were used within the context of a structured interview. In each institution, a Quality/Curriculum Manager, a Section/Course Leader, and a MIS Officer were interviewed, as these three perspectives were viewed as distinct. The questions (and summary results) are included as AppendixC .The nature of the questions allowed mainly closed responses, with an opportunity to comment further.

7.3.2 Collation of results data

At the same time as the interviews were being conducted, raw data from SQA

and SOEID was being drawn down and considered in a series of meetings by the project team. In the light of the responses, reporting “spreadsheets” were developed which reflected student pass rate information. The headings used on the spreadsheets were developed through a balance of the task outlined in the initial project specification and the feedback emerging through the questioning and responses. Due cognisance was taken of the sensitivity of publishing information that would be seen as unhelpful, confusing or potentially so refined as to identify individual candidates. The resultant data tables are published within the Benchmarking document issued (as a result of this work) at the SFEU Benchmarking event in May 1997.

A decision was taken by the project leader (the author) to extend the work of the team beyond the initial task to “...investigate the feasibility...” and to actually publish sets of data to allow people to work with it, whilst including all work within the original specification. The results of the work are this report and the dissemination event of 5th May 1999.

7.3.3 Rules for the exclusion of data

In collecting the data and assessing what should be excluded the following principles (based on SQA practice) were used.

- All information should be openly available to users unless there are specific reasons to withhold it.
- Information on institutions that may be commercially sensitive should not be published without their prior consent.
- In publishing information on results, data should not be presented in such a way as to allow a user to identify (or reasonably infer) a candidates’ personal results.
- Information should, as far as is practicable, be presented with clarity, be concise and be helpful.

Some guidance was also developed for the exclusion of data, to maximise the validity, reliability, confidentiality and usefulness of the information. Results for NC Modules and HN Units were listed only where there had been at least 100 entries in any one of the three years. This avoided the risk of identification of individuals, and helped ensure that conclusions on trends and results were based on a viable sample number. It also cut the tables down to a manageable number of pages (27 pages) whilst covering approximately 90% of candidate entries.

Tables identifying the relative position of colleges in entries, pass rates, withdrawal rates and modes of attendance are published anonymously, using only totals, averages and an indication of spread, not identifying specific institutions.

Key points arising from section 7.3

- An initial launch event in May 1999 helped to inform the sector and engage it in the project.
- The event allowed sector representatives to influence the selection of priorities, questions and sample colleges.

In terms of the research objectives, this section raises the following issues.

- The action research model was used to engage the wider professional community in the study.
- The study was initiated taking the first three research questions within this phase.

7.4 The study: phase 1 findings

This section explores and investigates the integrity, validity, and reliability of the historic data (information collected in years 1994 to 1997). This data is the information held by the SQA currently, which has been provided by colleges. The information collected in this study (for comparison with the previously collected SQA data) is collated using the specific questions in the interviews asked of the respondents (college staff). The responses are perceptions and beliefs, which the scenario questions helped to verify or refute. The questions were used with three staff with specific roles in each of nine colleges.

7.4.1 Questions used with college staff

The questions used with the college staff (and the collated responses of the three groups of college staff) are attached and responses recorded in detail as Appendix C. This following summary draws conclusions from these responses.

Q7(a) Definition of SARU – Number of student units achieved

A considerable majority of respondents utilised the definition given by SOEID guidelines, although this was not a universal response. As this was not a universal response, there is likely to have been an impact on the accuracy of the previously recorded SARU PI data.

Q7(b) Definition of SARU – Number of student units undertaken by enrolled students

The majority of respondents utilised the definition given by SOEID guidelines (10/96). However, a significant minority were utilising the (out of date) definition given by the previous circular (14/95). The responses indicated a variation in application of SOEID guidelines between colleges and within colleges. Therefore, SPAR PI data previously recorded is likely to be inaccurate.

Q8 What percentage of students are 'withdrawn' from NC modules in the college?

The responses indicated that there is a wide variation in the number of students withdrawn from National Certificate modules amongst colleges. Consistency of response within colleges varied considerably. This again would distort the PI information where the "withdrawn" statistic, part of the SARU PI, is assumed to be taken from a uniform definition and approach.

Q9 What are the main reasons why a student may be withdrawn?

The majority of respondents identified similar reasons for colleges withdrawing students, such as, students failing to achieve at least one learning outcome, or students leaving programmes. However, the respondents identified differing administrative practices which have an impact on the level of students being withdrawn.

Q10(a) In what circumstances would you decide not to enter a candidate who registered an interest or attended the module/unit.

The majority of respondents stated that they entered students automatically on enrolment. It should be noted that the entry process outlined by respondents indicated a wide spectrum of approaches. An important minority of respondents identified practices which varied from the norm, such as; entering students at a later stage when they have shown some level of commitment to the course of study; students sampling modules before being "officially" entered; or not entering students until the level of module is decided.

Q10(b) Does this decision not to enter happen with particular groups?

A significant number of colleges indicated that they delayed enrolment of students following SVQ programmes for various internal reasons. Other colleges indicated that the same procedure of delaying enrolment was adopted for students studying by flexible learning.

Q11 At what point do you enter a candidate on a RET5 for an SQA award?

The majority of respondents indicated that candidates were entered on a RET5 automatically at registration, with others indicating that entry took place within a number of weeks into the programme.

Q12 At what point is the RET5 information forwarded to the SQA?

The majority of respondents indicated a desire to adhere to SQA guidelines, although achievement of this target varied significantly from college to college. SQA gave 30th October as a deadline, yet colleges were submitting this information as late as February.

Q13 What percentage of students are withdrawn between recording them on a RET5, and journal entries to the SQA?

The responses indicated a variety of practices for the withdrawal of students at this stage. Responses varied from <1% of withdrawn students to <10% of withdrawn students, and a number of colleges highlighted internal practices and procedures that resulted in data being amended prior to formal entry to the SQA. (Note – SQA data suggested that much higher withdrawal rates - of up to 76% - were actually in place)

Q14 In what way do you feel there could be inaccuracies of recording, different interpretations of student enrolment data or different interpretations of student pass rate data supplied to the SQA?

There was no clear consensus in the responses given. The responses included administrative errors, different recording and enrolment practices being utilised between institutions, and varying procedures and practices implemented for particular groups where the programme of study was not completed within the academic year.

7.4.2 Additional ‘Scenario’ Questions

The responses provided to the additional “scenario” questions indicate a variety of practices within and between colleges regarding the following procedures:

- the use of SOEID guidelines for SARU definitions;
- the entry of candidates on a RET5; and
- the withdrawal of students before the RET5 is sent to the SQA.

The detail of questions and results are included in appendixD.

Key points arising from section 7.4

- The responses indicated great inconsistency in knowledge of PI definitions
- There were wide variations in application of definitions within colleges, among colleges and across years

In terms of the research objectives, this section raises the following issues.

- The responses provide a clear answer to research question 1.
- The responses give a foundation for the further work on research questions 2 and 3.

7.5 Other issues raised within phase 1

The additional issues addressed are:

- the impact of Higher Still;
- reliability of data;
- validity of data; and
- future publication of the data.

7.5.1 Impact of Higher Still

It was clear that the revised qualifications framework will impact in a number of ways, principally:

- programme support;
- programme content; and
- student profile.

Programme support – colleges will require to look at their guidance and support structures, and many are likely to revise their provision, which will have an impact on quality.

Programme content – new units (modules) with associated additional materials will impact on the content and indirectly on the teaching and learning approaches. External examination will be a factor in the teaching and learning, and in the results profile. The new unit (module) numbers and titles will also make historical comparisons (using the data in this report) more difficult.

Student profile – a changed level of prior experiences and qualifications, a change in core skills profile, and more tiers of achievement may have an impact on quality.

Although these changes were broadly recognised, there is limited knowledge of the base level of SARUs (module/unit pass rates) and the anticipated impact of change.

7.5.2 Reliability of Data

It is clear that the methodology to calculate SARUs and deal with such data has been available in all institutions visited. However, the reliability (the ability to get consistent results/interpretations over time) is a serious difficulty for college staff. All aspects of reliability and consistency were problematic. Consistency over time, consistency within a college and consistency between colleges all gave some cause for concern. One key indicator of this was the varied levels of student withdrawals. As any withdrawal impacts on the SARU, variations in these results give cause for concern when comparing data from different institutions. Withdrawal rates varied from 7% to 41% for NC Modules, and 14% to 76% in HN Units. As this student registration and withdrawal may be the result of administrative approaches or errors, conclusions on the reported data should be viewed in the context of these varied withdrawal rates.

7.5.3 Validity of Data

There is a central question regarding validity (does the measure applied reflect the information sought?). The issue is whether SARU rates as recorded indicate the level of student success. The study indicates that recording and administrative practice impact significantly on the data. A major example of this is obvious when student withdrawal rates are considered. Major distortions may occur where a college:

- enters a high level of enquiries as student entries, withdrawing them later; or
- enters students “in batches” for modules on a standard programme, withdrawing students later when changes are made.

In these circumstances the SARU will look (artificially) low

Major distortions may also occur where a college:

- accepts staff not entering students where very few attendances occur before it is clear they are not joining the programme; or
- is applying the “25% attendance rule” for SARU calculations.

In these circumstances the SARU will appear (artificially) high

7.5.4 Future Publication of the data

The work and feedback indicate that:

- college staff want to avoid the collection internally of any additional data;
- subject specific (unit based) pass rate information can help establish standards; and
- SQA data is broadly accepted by college staff as reliable (feedback from initial focus group) and already embedded within the data collection system.

For this reason, SQA have indicated a general willingness to consider the publication of (or access to) most of the data within this report for future years. This must be considered in the context of Higher Still and the new National Qualifications. Where a commitment in principle to engage in publication of this material can be given, new aspects such as external examination results will have an impact.

The primary vehicle for access to the information in future years will be The SQA Annual Statistical Report. In addition, colleges will require to use their own internal information to make “benchmark” judgements on their relative position.

Key points arising from section 7.5

- The introduction of the new National Qualifications (Higher Still) will impact on PI collection in several ways.
- Validity and reliability of PI information are clearly suspect given current information and methodology.

In terms of the research objectives, this section raises the following issues.

- In research question 2, the issue of effective use might embrace the matters of validity and reliability.
- The extension of PIs to address quality improvement issues raised within the revised qualifications framework contributes to research question 3.

7.6 Conclusions and recommendations from Phase 1

7.6.1 Conclusions

The major conclusions from Phase 1 are as follows.

- The level of knowledge of data available for national comparison was generally low.
- SQA data was broadly accepted in the FE sector as valid, reliable and useful.
- Where there were differences between the SQA and SOEID data (as different reporting criteria were applied), SQA data is likely to be the easiest to publish and use.
- Colleges have a range of ways, often different, to interpret attendance and success, which influence the reported results.
- Colleges often deal with initial attendances or enrolments in inconsistent ways (this is the case within colleges and between colleges), resulting in college reported SARUs not being an entirely reliable method for comparisons.
- Information showing general trends in results was perceived as useful.
- Publishing results by college is likely to lead to comparisons between colleges, which would be based on data that is not collected using a fully reliable and robust methodology.
- Results available to staff by unit and module based on national averages were viewed as a potentially useful tool in the self evaluation process.
- National results would also provide useful evidence to support auditing.

7.6.2 Recommendations

Following on from these conclusions, the study leads to the following recommendations.

- Publishing results on the basis of individual modules and units should be undertaken (done within this report), providing data electronically to allow colleges to manipulate and interrogate the data.
- SQA should consider making available module and unit results annually.

- Publishing results that specifically compares the individual results of colleges would be misleading as the data is not robust enough for this comparison to be valid, therefore, at this stage of development this should not be undertaken.
- Publishing general (anonymous) results of a large sample of college results would help provide college staff with an indicative benchmark, and would help raise reflective questions where uniform definitions and procedures are applied within the sample.
- Support through information and training should be provided to colleges to help ensure valid and reliable recording of results that can be used for benchmarking against national standards.
- Further work should be done to investigate issues dealt with in outline in this study.

7.6.3 Further work suggested from Phase 1 activity

On the basis of the feedback provided through the study, it is recommended that:

- training and support for college staff is provided in the collection and use of student data to allow a consistent and reliable data set to be established which would support valid national comparisons;
- SOEID/SFEFC consider the difficulties in using "enrolments" as student who attend very few times create a difficulty in recording consistently, addressing issues such as: clearer guidance; auditing/monitoring of procedures; and changing the working definition to a more practical definition;
- further work is done on the impact of Higher Still, and how reporting of units, courses and Scottish Group Awards could be collected and used;
- as the main influences which added error or inconsistency were broadly identified, guidance could be developed to help estimate the margin of error or inconsistency;
- mapping and publishing different groupings of colleges (such as community colleges, rural colleges etc) could be modelled; and
- further examination and presentation of options on the benchmarking of

flexibly delivered qualifications, work-based qualifications and non recognised qualifications (NRQs).

These items of further work are substantially addressed in Phases 2 & 3.

Key points arising from section 7.6

- Following the study, a number of recommendations and conclusions were derived.
- It is clear that further work was needed, the key elements of this work being identified within the study.

In terms of the research objectives, this section raises the following issue.

- The further work identified will address specifically research question 3.

8 The study: phases 2 and 3

8.1 Project background and rationale

This section outlines the background and work that leads to the second and third phases of the study. The first phase of the study identified difficulties in the collection and use of performance information. The second and third phases outlined here look at the detail of problems and possible proposals to resolve the problems and difficulties.

The use of PIs and benchmarks have been a major part of the quality regime for colleges since before incorporation. There have been PIs in common use for some time, and a general uniformity of definition given through the HMI report 'Measuring Up' (SOEID, 1990). This was supported through additional information on definitions and use of PIs in a series of Scottish Office Education & Industry Department (SOEID) memoranda. These modifications and developments were based upon the deliberations of a working group, which steered recommendations.

In 1998, the move to a stronger model of self evaluation reflected a development from the focus on quality standards to quality improvement. The publication of 'Quality Matters' (SOEID, 1998) and the introduction of the new qualifications framework through the Higher Still development, together with the establishment of the SFEFC helped move the context on considerably. As colleges became more mature bodies, taking greater responsibility for quality development, there was a growing need to:

- check the validity and reliability of college based (PI) data;
- check the use of college based (PI) data and national (Benchmark) data to support quality development;
- investigate options on the use of the data for quality improvement; and
- recommend improvement and change where it is needed.

The benchmarking projects reflect the need to progress these sensitively in an environment where colleges feel that a high level of external quality assurance is itself a difficult burden.

8.1.1 Project outline

This project was commissioned by the Audit Unit of Her Majesty's Inspectorate (HMI), and was charged with undertaking an assessment of the current practice and use of PIs and benchmarks in the Scottish further education sector. The project staff was also requested to consider how the current practices could be made more robust and useful, and in this context, identify options for the development of these data sets.

This study summarises the work undertaken in this regard, building mainly on:

- phase 1 Benchmarking Project report (completed in April 1999) - focusing on SARU data;
- HMI task report (the IRCOL report completed in June 1999); and
- a series of focus groups conducted with sector practitioners in July 1999.

This publication, intentionally, does not contain either exhaustive data sets or comprehensive and detailed records of the various pieces of research undertaken.

The outputs of this study are therefore:

- a succinct analysis of the reasons for inconsistency in college-produced data, together with recommendations for corrective action;
- consideration of the impact of Higher Still on benchmarks in the sector;
- a 'starter set' of benchmarks for Phase 3 of the project (known by SOEID as the STSFE project); and
- the options for the future development of PIs.

8.1.2 The current position

Phase 1 of this study highlighted important inconsistencies between the SARU data being produced separately by colleges and by the SQA. This also explained inconsistencies identified in data produced by SOEID. The IRCOL report also made it clear that considerable confusion exists over the definition of terms within the (current) standard PI set. The importance of these variations lies in their impact on any attempt to assess what the national position actually is, as they artificially skew the figures, in some cases up and in other cases down.

The project team has concluded that the main reasons for these differences are:

- colleges' differing interpretations of the standard set of PIs; and
- the range of administrative practices in colleges for the recording of student data for use by the SQA.

8.1.3 Differing interpretations of the standard set of PIs

The IRCOL exercise found that, for every PI within the standard set, there were differing interpretations being applied by colleges across the country. In the main, the report concluded that this was due to the definitions of the terms within the PIs being subject to misinterpretation. Accordingly, the report recommended that the standard set be revisited with the aim of providing tighter, more consistent definitions. In this way, the majority of errors of interpretation can be eliminated.

Key points arising from section 8.1

- Phase 1 work and HMI work have underpinned the need to further develop and improve the use of PIs.

In terms of the research objectives, this section raises the following issue.

- The foundations for the process of investigating research question 3 have been established.

8.2 Colleges' administrative practices

College administrative practices varied considerably in a number of key areas.

These included:

- initial enrolment;
- amendment of data; and
- withdrawals.

8.2.1 Initial enrolment

The key inconsistency at enrolment surrounds the timing of the college entering enrolment data. While most colleges entered this at the commencement of the course, a significant minority adopted other practices. These included:

- the entering of data at a later date, to allow students to show commitment to the course;
- students being allowed to 'sample' modules before being entered; and
- entering student data once the level of module has been decided.

These practices have the net effect of artificially raising the SARU level above that which would be generated if automatic entry at the start of the course was adopted as standard practice.

8.2.2 Amendment of data

Another main reason for data inconsistency is the variety of college practices in connection with the amendment of data between the student being entered on a RET5 (the form colleges use for recording student entry) and these entries being forwarded to the SQA.

Again, the majority of colleges simply entered the data on a RET5 and forwarded the data to the SQA promptly, although the actual return time varied. However, a significant minority of colleges confirmed that they adopted other practices, all of which allowed the original RET5 data to be amended prior to being forwarded to the SQA.

Reasons for these changes included:

- withdrawing students who dropped out of courses;
- correcting administrative errors in data input; and
- minimising student entries, and, thereby, minimising expenditure.

Again, colleges who deviate from the expected procedure are able to produce higher SARU figures than those who supply data without any amendments.

8.2.3 Withdrawals

The Phase 1 report also identified a range of similar practices in connection with the withdrawal of students. For the year 1997/98, the study identified college withdrawal rates of between 7% and 41% for NC modules, and between 14% and 76% for HN units. As the IRCOL study confirmed, the majority of staff did not recognise the linkages between such actions and their impact on PI data. This was true of academic staff who dealt with enquiries and course advice, and administrative staff who dealt with the recording and entering procedures without any direct contact with the students.

A smaller range of reasons for the varying practices emerged from the study:

- recording a withdrawal for students failing to achieve at least one learning outcome; and
- entering students for a standard batch of modules, then amending the batch later to reflect individual needs.

Primarily due to the latter reason, the SARU data produced by colleges adopting these practices is artificially reduced, resulting in concern over the validity of comparisons between colleges.

Key points arising from section 8.2

- Colleges' varied administrative practices have had a major impact (in identifiable ways) on the PI data produced.

In terms of the research objectives, this section raises the following issue.

- Actions to address the varied administrative practices will be needed to address research question 3 and to improve professional practice.

8.3 The likely impact of Higher Still

The phased introduction of the new National Qualifications (known as the Higher Still programme) introduces a number of new issues to the general consideration of the PI/benchmarking process which are worthy of note, although they are out-with the immediate scope of the study. These are:

- the changed qualifications framework;
- changes in the profile of candidates;
- concurrent changes;
- context for decisions; and
- options for consideration.

8.3.1 The changed qualifications framework

Current PI work and analysis is based on two main classes - the 'unit' and the 'programme'. These are reflected in the SARU and SPAR PIs respectively. The new framework introduces a third class - the 'course'. As this is likely to be a significant building block, it would benefit from an appropriate PI.

In addition, the existence of a range of levels within the non-advanced qualifications makes these directly comparable in their own right, and they may also be compared with Standard Grade. The issue in this case is to define the level(s) at which the PIs should be established.

Key issues impacting on PIs include:

- the need for a course-based PI;
- the opportunity to analyse PIs by subject, level and grade of award in respect of course achievement;
- greater significance of core skills units; and
- an opportunity for comparison with standard tables for schools.

8.3.2 Changes in the profile of candidates

A central intention in the development of the Higher Still model was to support and promote lifelong learning. The likely use of the new qualifications for people to work up and across to extend qualifications should support school-college articulation, and may also motivate people to return to learning later to build their qualifications. This may, in turn, mean that the profile of candidates and their patterns of attendance may change in time.

There is also the likelihood of more candidates entering college with some parts of their awards already completed, in school or elsewhere. Key issues impacting on PIs are:

- more candidates enrolling on a wide range of programmes; and
- more candidates enrolling with some parts of their programmes already achieved.

8.3.3 Concurrent changes

A number of organisational problems left over from the merger of SEB and SCOTVEC are being addressed to coincide with Higher Still implementation. These changes include the introduction of an Awards Processing System (APS), the intention to provide a wider range of information within annual reporting and a revision of quality and administrative guidelines.

Meanwhile, colleges have in many cases amended their support systems, mainly in the areas of guidance, MIS and bursary administration. These changes may in turn impact on the options, guidance, funding and awards profile of students using the new framework. Key issues impacting on PIs are:

- an 'entry' (enrolment) date for new qualifications;
- external assessment;
- inclusion of 'achieved', 'fail' and 'withdrawn' on SQA returns; and
- no further recording of 'outcomes', only complete units.

8.3.4 Context for decisions

Where pass rates for awards may be clear and simple to record, comparisons across colleges and between sectors may not be valid, reliable or useful. The complexities of FE include:

- varied attendance patterns - incorporating a wide range of full-time, part-time, flexible and open learning attendance modes;
- a wide range of previous experience and qualifications - many students within the FE sector come to it with infinite combinations of qualifications (including outdated ones) and work and life experience;
- the financial pressures creating many withdrawals - all colleges are experiencing substantial student withdrawals for financial reasons;
- the value of unit-only passes - which are likely to be acceptable within the sector, but less so at non-college HE providers;
- open access policies - under which colleges are finding new and, in many cases, untried ways of accepting all potential returners to learning into the college environment; and
- differing MIS and administrative structures - since incorporation, colleges across the sector have evolved substantially different systems, and have made considerable investments in these systems.

While PIs may be useful, national benchmarks, particularly in areas where the same qualifications may be offered in both schools and in FE, may well cause difficulties in use and interpretation.

8.3.5 Options for consideration

- Introduction of Student Course Achievement Ratio.
- Separation of 'withdrawn' students in SPAR and SARU.
- 'Enrolment' definition (currently used for SPAR and SARU) to be SQA entry date.
- Use of core skills as a basis for added value or 'social inclusion' PIs.

Key points arising from section 8.3

- The introduction of the new National Qualifications framework (Higher Still) will require revisions of the current PIs.
- The SQA have changed recording mechanisms and terminology in 1999, which needs to be reflected in PI guidance.

In terms of the research objectives, this section raises the following issue.

- Research question 3 and improved professional practice will be addressed through changes in guidance that reflect the findings of this section

8.4 Background for the improvement of the current system

Project work to date has identified a number of central issues that need to be addressed if the current system of PIs and benchmarking is to be improved.

While there is no evidence that PI data collection or calculation is being manipulated to create a positive image within colleges, a number of central issues remain:

- the different extent to which colleges collect and use PI data;
- problems with the validity and reliability of current PI data;
- the varying collection methods and interpretations make comparisons either between colleges or across years unreliable;
- information, training and support in this field is poor within colleges;
- data is not currently collected on the understanding that it will be used for inter-college comparison;
- understanding of the data and potential use of the data is typically very low;
- PI data is rarely central to quality improvement processes at operational level; and
- key areas are not captured by current PIs.

8.4.1 Focus group findings

The focus group work undertaken allowed for the views of a wide range of senior managers to be taken into account. In summary, the following conclusions were drawn:

- the distinction between PIs (institutional) and benchmarks (national) was generally clear to the group, but fewer in the group believed the distinction would be clear to FE staff; and
- there was a strong acceptance that the PI and benchmarking data itself was of less significance than the need to encourage the questions which follow from the data, and to use the benchmarking process constructively to improve quality levels.

Arising from the HMI task report, the key areas of:

- social inclusion;
- wider access and; and
- open/flexible learning

were identified as needing an adequate presence within the 'starter set'.

Accordingly, these issues were modelled and tested in focus groups. The results of these tests were -

Social Inclusion PIs

A - 'based on achievement within an average period since last educational programme'.

B - 'based on achievement within an average period since last f/t or p/t employment'.

In response to the two PIs modelled, neither was seen as being a useful primary PI, although there was stronger support for their use in a secondary role.

Flexible Delivery PIs

C - 'based on achievement/success to be defined in year of completion only'.

D - 'based on average time taken to deliver an SVQ or open/distance learning programme'.

E - 'achievement for open/distance learning within a two year rolling programme'.

Of the modelled PIs, C was generally accepted as the most attractive. There was general agreement that SARU, rather than SPAR, was most appropriate for this work.

Distance Travelled PIs - in all cases, relative to an initial student assessment

F - average core skills achievement in terms of completed units.

G - average core skills achievement in terms of completed outcomes.

H - core skills progress based on level of core skill gained.

I - core skills progress based on selected core skills (communication and numeracy?).

While, of these, F was the most popular model, there was great concern expressed over the validity of the PI, particularly since core skills have yet to be adopted, and may be a mechanism which is not widely used. There was also a strong view that the qualitative nature of 'distance travelled' will make any attempt at measurement no more valid than the existing QLT information.

There was clear consensus that PI information should be monitored and checked, on a sampled basis, but without any clear feeling as to which agency should conduct this. The view was consistently expressed that some kind of peer review (in terms of colleges) which was developmental in nature would be most appropriate.

Key points arising from section 8.4

- The revisions sought in the current system by FE are primarily about the focus on quality improvement.
- PI and benchmarking information could be extended to include social inclusion, flexible delivery and 'distance travelled'.

In terms of the research objectives, this section raises the following issue.

- In research question 3, the extension of PI use to a wider range of areas in line with the findings in this section is an option for the improved use of PIs.

8.5 Proposals for improvements to the current system

After considering all of the feedback, together with the range of project findings, the following observations were established for consideration to underpin the improvement of the current system:

- the existing standard set of PIs be revisited, to tighten their definitions and terms, with the aim of making their interpretation less subject to error (proposals for this are contained within appendix E);
- a programme of national training be undertaken, in which the definitions of (and relationship between) PIs and benchmarks, together with their use in self evaluation, is a central feature (this programme was delivered within Phase 3 of this project);
- a national framework for measuring ‘distance travelled’ be developed for application in the context of returning adults (this would require further detailed study);
- for programmes designed to extend beyond one academic year, a system of extended time frames be developed, thereby enabling the development of national benchmarks for these programmes (this would require further detailed study);
- that consideration be given to the development of a ‘distance travelled’ benchmark for students involved in English as a Foreign Language or English as a Second Language programmes (this would require further detailed study); and
- that a system of monitoring of PI data returns be established, with colleges providing this to each other on a peer review basis, and the system being reported on as it develops (to avoid an additional audit load, it may be possible for colleges to provide this service to each other).

8.5.1 Specific Recommendations from Phase 2

Based upon the work in the Phases 1 and 2 of this study, this project brings forward recommendations in three areas:

- minor revisions needing immediate implementation;

- proposed improvements requiring further consideration; and
- areas for further work

8.5.2 Minor revisions for immediate implementation

Recommendation 1

That the revised 'Starter Set' of PIs be adopted as outlined in this report.

Recommendation 2

That the workshop programme planned within Phase 3 be delivered in February 2000. This programme covers the 'Benchmarking' work to date, introduces the 'Starter Set' of updated PIs, demonstrates the calculation of PIs, and indicates how these can be used in conjunction with national benchmarks.

Recommendation 3

That 'failed' students are recorded separately from 'withdrawn' students for the academic year 1999/2000*.

** The SQA Awards Processing System started recording results in this way from 1st August 1999, therefore adopting this recommendation will only require endorsement of publishing and using the data in the way it will currently be recorded and sent to colleges.*

8.5.3 Proposed improvements requiring further consideration

Recommendation 4

That a performance indicator of 'Student Course Achievement Ratio' be introduced from July 2000.(This has not been adopted.)

8.5.4 Areas of further work

Recommendation 5

That a national framework for measuring 'distance travelled', or individual improvement, be developed for application in the context of returning adults (based upon the feedback and models considered within this study).

Recommendation 6

For programmes which extend beyond one academic year, an agreed system of extended timeframes be developed (based upon the models developed and tested in this study), enabling the development of national benchmarks for these programmes.

Recommendation 7

That a system of monitoring PI data be established for colleges.

8.5.5 Phase 3

The work in Phase 3 is primarily to develop a pack outlining definitions and examples of PI information that could then be used within colleges. This pack is developed, and a complete version is included within the appendices. The background work behind this development activity has been outlined within the Phase 2 outline. The key definitions (which have been revised and updated as a result of Phases 1 and 2) are outlined within the appendices as appendix E.

Key points arising from section 8.5

- A number of recommendations were established for the improvement of PIs. In terms of the research objectives, this section raises the following issue.
- The results of investigation of research question 3 are detailed in this section.

9 The study: phase 4

9.1 Context

From the feedback from earlier work with colleges within this study, and through the FEQIF, SFEFC accepted the need to extend the use of self evaluation to the support area of IT. The research underpinning this work would also examine the potential to develop useful benchmarking and PI information in the area of IT support. This work will build upon the earlier research into benchmarks and PIs developed for the academic support in colleges.

Key points arising from section 9.1

- The work on IT will be built upon the earlier research, and is broadly recognised as a need for FE by the key agencies.

In terms of the research objectives, this section raises the following issue.

- Research questions 4 and 5 are underpinned by the fieldwork and literature review conducted in earlier stages of this study.

9.2 Project background and rationale

The SFEFC Learning and Teaching Committee advised the SFEFC Council to dedicate funding to a number of college based projects to develop and test standards for use in college IT support. This is detailed within SFEFC Circular FE/58/2000. The work outlined in this section reports on the activity of the only approved bid resulting from this invitation, led by Glenrothes College and project managed by SFEU. The circular states

The Council wishes to ensure that ICT is used effectively and appropriately not only in learning and teaching, but also in the support which it provides to a broad range of college functions. The Council believes that the best way to achieve this is to encourage colleges to fully embed ICT issues in college quality systems, and in particular to promote greater integration of ICT within self-evaluation processes.

Thus the focus of this particular initiative will be on developing evaluative tools and processes to promote continuous quality improvement in the use of ICT, and to enhance the support which ICT provides to a broad range of college functions. The Council wishes to promote development activity and the spread of good practice in the inclusion of ICT within self-evaluation. It is envisaged that this will be achieved in a two-stage process.

Stage One will be based on a collaborative bidding process, and will focus on the identification and refinement of existing good practice in self-evaluation of the effective use of ICT within colleges. This may involve activities such as:

- the development of standards for ICT services
- effective means of including ICT services within self-evaluation

- developing robust quantitative and/or qualitative methods for evaluating the effective use of ICT in supporting aspects of college functions such as finance, marketing and course information, guidance and student support services, enrolment and admissions, and/or estates
- extending existing self-evaluation practices in learning and teaching to include a wider range of activities such as the use of ICT to support flexible and open learning.

Stage One is likely to involve a small number of collaborative bids from colleges with existing experience in developing and using a standards-based approach to self-evaluation. (SFEFC Circular FE/58/2000, p.2)

This specification of activity led to the development of a project proposal outlined as appendix G.

The project plan was written and agreement reached amongst the partners on the delivery activities and timescales. The general timescales and planned activity were influenced by several key factors which, in practice, were to create difficulties of implementation. These factors were: the perceived timescale to develop a bid for the follow up implementation phase; the planned review activities already in place in existing college operations; the optimum times for the release of IT support staff to focus on this work; the time needed to train and support IT staff; and the amount of time needed to properly research and evaluate the effective use of standards. A balance was reached in trying to reconcile the need for a co-ordinated project, and the practical issue that peaks and troughs of activity do vary between similar institutions. There was, even at the planning phase, a recognition of difficulty in finding ways to free up time for IT staff to actively engage with all the work needing done.

Key points arising from section 9.2

- A project proposal was developed and adopted to bid for the ‘challenge’ funding made available from SFEFC for this purpose.

In terms of the research objectives, this section raises the following issue.

- The extension of the literature review and fieldwork to examine research questions 4 and 5 were funded and supported through the mechanisms outlined within this section.

9.3 Methodology and approach

9.3.1 Defining the initial draft standards

The general approach is outlined within the project proposal. It is essentially an action research model taking the initial standards developed within Glenrothes college, applying those standards in four colleges, and taking feedback on the usefulness of the standards. A second iteration using these first revisions was then applied, using the revised standards in three different colleges.

Whilst the college based activity and revisions were being done, desk research was conducted to underpin the thinking behind the standards and to inform the key groups making decisions about the standards. In addition, external input and visits to key institutions were arranged to bring external information and experience to the attention of the steering group. Following the refinement of the standards and the desk research, further work was done using expert groups to investigate the potential of using PIs or benchmarks to support this quality improvement.

9.3.2 The development of the standards

The Standards were made available to Cumbernauld College, Elmwood College Fife College and South Lanarkshire College. The colleges were asked to prepare staff, and to apply the standards in the period from late May for submission to the steering group by June 8th, 2001. The key contacts from the colleges were briefed on the use and implementation of the standards, and a series of review questions developed to seek structured and consistent feedback on the standards. Feedback was collected and collated and brought to the Steering Group on June 15th for consideration. The Steering Group found the process of reconciling this feedback to be difficult, but agreed a number of adjustments to the standards. The feedback from the colleges was collected using a consistent format, but it proved difficult to judge such things as strength of feeling or level of difficulty from the relatively simple feedback sheets. Following feedback from the

Steering Group, a different approach would be applied later with the groups to follow. The approach to collecting feedback in the second iteration would include using the same format of annotation and recording, but would be collected by interviewing the users of the standards in person. These interviews would, therefore, allow a greater reflection of the depth of feeling, and would allow less formal feedback to influence adjustments to the standards.

The initial revisions were made following the first round of applications, and the second group of colleges then applied the standards. Coatbridge College, Dundee College and Glenrothes College were given the standards, and applied them in the period from June 15th to June 29th. Feedback was then sought from these colleges. The holiday period made it impractical for the Steering Group in full to convene, but key members convened in Glenrothes College on July 3rd to make final adjustments to the standards in the light of this final and more detailed qualitative feedback. Again, the task of reconciling different views was not easy, but final revisions were agreed. These revisions are now the established standards, and are published as appendix H. In addition, they are available to the sector and can be viewed on the website pages

http://www.etc-learning.org.uk/bootstrap/8_ref/standards2.htm

9.3.3 Visits and external input

There were significant links with external organisations initially established through desk research, many of these have been reflected within the initial literature review. There were, however, specific links and visits that made greater contribution to the project. Key organisations were trawled through e-mail contact to help identify models of good practice in ICT support and the review of support. There was surprisingly limited response. However, a specific request to Mary Barker, Chief Executive of National Information and Learning Technologies Association (NILTA), produced some positive results. NILTA work extensively in the area of ICT with colleges in England, and identified six potential colleges that might be beneficial to visit. Of those six, the specific

descriptions of two colleges looked particularly interesting in relation to the study, these were Park Lane College Leeds and City College Manchester.

Park Lane College in Leeds is a large further education college, with around 600 academic and 200 support staff. It has a reputation for strong community links operating from over 60 sites in the city. The management and governance is recognised as progressive, evidenced through the college obtaining Beacon Award status. This is recognition by the funding authority of good practice which the college is supported financially to share. The IT in the college is run as a fully integrated system, and a high level of autonomy is given to lecturing staff to use and adjust the administrative records. In addition, there are many “hard wired” rooms and a relatively wide range of IT resources available. Four technicians who are contacted centrally and travel out to various sites provide the technical support. City College Manchester is a major metropolitan college, based on four sites, having around 500 academic staff and 200 support staff. Although the estate portfolio is that of a college substantially built in the 1960s, it has reasonable access to IT equipment. Networks run on the key sites supported in the main by 14 technical staff.

Contact was made with these colleges, and a visit arranged. Each college was given a copy of the project plan, and meeting times were established in advance with appropriate senior staff from the college. A visiting group of 4 from the project Steering Group, led by the author, visited and broadly followed an agenda where inputs on the college approach to IT and improvement were given, followed by extensive discussion.

In considering the feedback from the visits, there was broad consensus within the group on a number of points. The English model of self assessment (rather than self evaluation) had underpinned a more mechanistic and simple approach to review (see section 4.1). Self assessment is a process where an institution compares performance against a fixed set of standards using staff from the

institution. The normal outcome of self assessment is a grading, a score, or a confirmation of compliance. Self evaluation, by contrast, involves “evaluative” judgements in a report. The outcome of a self evaluation is a report which, in a reflective and descriptive way, makes a judgement on performance. This judgement may be characterised by value laden description (using terms such as “effectively”, “successfully” or “poorly”), or by the use of ratings or gradings. A self assessment will typically confirm compliance, and institutions can reflect the fact they have achieved an understandable standard such as IiP or SQMS. A self evaluation will typically generate an action plan for quality improvement.

The self assessment approach seemed to encourage looking at strengths and weaknesses from a provider rather than user perspective. In addition, it led to a focus on efficiency of operation rather than effectiveness. Where the colleges visited did seem to reflect and improve their systems, this was clearly down to new and effective senior managers rather than a structured environment of reflection and improvement. Where big improvements in recent years were reported in both institutions, they were reported in very different ways. Indeed, when specifically asked how improvement was judged or measured in one institution, the reply described anecdotal and informal feedback obtained casually from staff and colleagues.

In spite of this less uniform approach, both institutions had taken a ‘snapshot’ of user feedback to underpin their radical improvements. In Park Lane College, this had been a structured approach based on a commercial model, using a significant number of staff interviews. The distinct difference (and weakness) when compared to the model being developed within this research is that the English colleges did not repeat the exercise to take user feedback once major actions for improvement were taken.

The positive lessons from the visit were varied. Good practice in the use of IT was obvious, and this ‘inspirational’ element was of itself valuable. The extent

of improvement over a short period given committed managers was also encouraging, and emphasised the key need to manage the process of improvement. The benefits of structure, evaluation (not simply assessment) and repeating the process annually were clearer when reflecting upon the alternative, which was improvement through shorter-term activities.

9.3.4 Investigation of PIs and benchmarks for IT support

This work was planned to develop using an expert group of IT managers to feed in views of what benchmarks they used or would like to use, and what PIs they felt would be useful. A meeting was convened and the Nominal Group Technique was used to structure discussion and input. The Nominal Group Technique relies on participants noting their own ideas, pulling these together in a group, and through discussion agreeing a solution, an action or a series of priorities.

Although a set of questions was established in advance for this group, a number of issues arose at the meeting that led to a revision of the technique. Where the group had been charged with specifically identifying key PIs and benchmarks, the group members repeatedly claimed the operating context to be too varied and complex for this simple approach to be fully effective. Varied because a wide range of MIS systems, networks, hardware and software were in operation within and throughout institutions, making reliable comparisons difficult. Complex because any PI and benchmark information would rely on robust and timely input of information, and this varied in different areas of college activity and at different times.

The feedback from the group led to the following general conclusions. Robust benchmarks to allow comparison across the sector would be very difficult to produce, and would be viewed with some scepticism at this time. PIs to be used internally in a college to track changes over time would vary from college to college as an understanding of the reliability of information would be essential

for the useful interpretation of the statistics produced. “Simple” PI and benchmarking information such as ratios of students to PCs and staff to PCs would be of interest. Further desk research rather than expert input and discussion may yield useful information from outwith the sector and outwith current experience to help inform ideas and improve practice.

These conclusions led to further desk research being undertaken, and a number of useful models were identified that could support self evaluation.

Most importantly, the group broadly rejected the idea of collecting and using benchmarks as supportive. The general view was that institutions would need to have methods for tracking progress, so assistance in defining and collecting PI information was of value. However, complexities such as the systems in use, the student profile and the organisation of the support service made comparisons across institutions difficult. The managers sought guidance on what PIs would be useful, and giving definitions that could easily be related to the self evaluation standards would be particularly helpful. In addition, guidance on collection of information or model questionnaires were also described as useful.

This work was done and is described fully within appendix F. The research and resulting narrative provides guidance using the headings within the standards, and the materials have also been made available through the SFEU website.

There was a general consensus that some statistical information on benchmarking could be developed, but that this would not be robust for comparison between institutions, and would not be used. Therefore, at this stage no benchmarking guidance has been developed.

9.3.5 Major dissemination event

One major element of the project was a dissemination event designed to share the initial findings of the study, and to seek feedback on the way forward. This event was delivered on September 19th, 2001, and all 46 colleges were invited to

send up to two representatives. The programme for the event is attached as appendix G.

In planning the event, the key aims were to: share the findings of the literature review; explain the rationale for the standards; share experience on the application of the standards; highlight good practice identified from outwith the Scottish FE sector; demonstrate the use of the website as a resource; and seek feedback on the further work to be completed. The timing of the event was moved from the planned August to September to allow for the easier release of staff through avoiding the peak recruitment and data input period.

The programme was put together by the Steering Group, and sent to all colleges. 54 representatives attended the event from 38 institutions. Feedback was sought on satisfaction from the event; this feedback gave a confidence that the event had achieved its aims. The feedback is summarised in appendix H. In addition, a structured set of questions was prepared to allow feedback on how the second stage of this project should progress. The delegates were broadly supportive of the model adopted in the first phase and supported the key ideas of a national project, co-ordinated centrally, to include regional training and be supported through a website as the central resource. A summary of the questions and feedback are included as appendix I.

9.3.6 International visits

The study had, through the literature review, identified key international links and potential organisations that could support comparison and learning. One such institution is Miami Dade College, Florida. Miami Dade College is recognised as one of the leading colleges in America in the use of technology in education. They had initially offered support to send a delegate to the dissemination event of the 19th September 2001, and share their experience of IT support. However, events of 11th September 2001 made it impractical to fly a member of staff from Florida. As an alternative, Dr Gale Woolley provided an

input to the conference through video-conferencing. Dr Woolley outlined the Miami Dade experience of using and evaluating technology, and provided comment and feedback on the model developed within the study. In essence, she confirmed that: the Scottish self evaluation model and the standards designed are at the leading edge of thinking; the key elements of systematically collecting user feedback was an idea that they would hope to use; the quality indicators outlined appeared to be comprehensive and appropriate.

In addition to this link with a leading edge institution, research suggested that the League for Innovation event in November 2001 would be a useful opportunity to learn from the American experiences of a number of institutions. Two members of the Steering Group attended this event to ensure a wide coverage of workshops and activities. This event is a large international gather of approximately 4,000 delegates, and is a balanced event with keynote addresses, workshops, round table discussions and the opportunity to make and extend informal links.

Key points arising from section 9.3

- The standards were made available in draft to a group of colleges who fed back views on applicability and usefulness, which were then considered leading to adjustment.
- A second iteration of changes were made following application in a second group of colleges.
- Visits to leading English FE colleges and information from American Colleges was also considered in determining the final standards.
- A major dissemination event, supported by a website, was planned and delivered.

In terms of the research objectives, this section raises the following issue.

- The fieldwork for research question 5 was conducted and described in this section.

9.4 Recommendations for follow up activity

9.4.1 Context

In extending this model in the sector, it is helpful to reflect upon the experiences of the initial activity, and ensure any plans build upon these experiences. The work involved observing practice, seeking expert views, and seeking views of practitioners who made comment on their practice and support needs. The following points summarise this activity and the views expressed by attendees at the dissemination event (more fully described in appendix I).

9.4.2 Feedback from FE practitioners on lessons from initial activity

The feedback indicates the following.

- Staff needed a greater level of staff development and support than was first anticipated, as self-evaluation for support teams was a very new concept.
- Release of staff to train and participate was very difficult, even where funding was available.
- Some evaluation gradings were correctly rated as 'unsatisfactory', hence support in looking forward and seeing this as helpful was essential.
- The varied structures of colleges made it difficult to define the group who should be involved in this reflective work.
- The concept was not initially welcomed by a significant minority of pilot staff, but broadly recognised as useful once conducted.

9.4.3 Recommendations for Stage Two

There are a number of elements needed within Stage Two to ensure that SFEFC strategy is met. As indicated above, feedback from sector representatives was provided at the national dissemination event held on September 19th, 2001. The summary of the questions and feedback are included in appendix I. The views expressed by delegates have been considered together with verbal feedback from

the steering group, and the recommendation from the IT project on the way forward comprises of advice on the following:

- information and support materials;
- staff development and training;
- organisation;
- external links; and
- funding.

The following text provides a fuller description of the advice.

For information and support materials the website should be the main resource for disseminating information and sharing documents. This view was the overwhelming view of the conference, as well as a strong view held within the project. Longer term, SFEU would host the material to ensure it is widely available over a longer period.

On staff development and training, there were mixed views on the best way forward, as the initial project had encountered many difficulties. As sharing experience and the discipline of centrally driven training was broadly favoured, the model of a programme of half day Regional Workshops as outlined in the original operational plan was favoured. This would be a series of three regional workshops delivered in January 2002. The workshops will include inputs from SFEU on aspects of self-evaluation, and of the pilot colleges on the use and application of the standards.

In addition, most respondents wanted a mixed mode, therefore, options of some central (and out of hours) sessions would also be helpful. Very few respondents (4) felt disbursement of funds solely for colleges to seek their own development was the best mode, however, each college should be offered one day's training on sight to support their own implementation.

It was also felt important in supporting staff development options, that funds be made available not only to pay for the staff development, but also to fund the release of staff.

Regarding the organisation and management of further work, on balance, the respondents and the Steering Group believed that a nationally driven programme would be of greatest benefit. Where there is no specific recommendation in this regard, ensuring ownership from the sector and alignment with other work was recognised as important.

On external links, 75% of respondents held the view that experience of other sectors and other countries may be helpful. This may be linked with a general enthusiasm (not fully captured) for the notion of a 'benchmarking club'. There was specific and useful feedback within the workshops suggesting that sharing key information and results would be seen as helpful. This process, aligned with information on other sectors and other countries could be established as an area of the site, with two or three supporting half-day events to look for methods of improving practice.

On funding, there was a strong view expressed that funding would need to be allocated to colleges to allow fuller participation in this process.

As a general observation, feedback suggested that many of the issues raised in implementing these standards are generic in nature, and apply to many areas of support in colleges. Elements of training and activity such as developing user questionnaires, evaluative reporting etc can equally well be used by other support staff. We might, therefore, want to ensure that using IT might help drive the wider agenda of reflection and improvement. Interactive material developed, and located within the website, have been written generically to take the above into consideration.

9.4.4 Funding and delivering Stage Two

Given the outline proposals, the following allocation of funding and activity were recognised and recommended as providing a basis for a way forward. The recommendations were that:

- a national steering group established, using mainly people involved in pilot work, reporting to SFEFC and creating links with sectoral bodies;
- project management and website development to rest with SFEU; and
- a national programme of regional training events planned for January till June 2002, with a summer target for implementation for most colleges. Colleges 'sign up' to a regional programme and timescale to access support.

Recommendations along the lines noted were passed to SFEFC. These were considered by the executive, and put to a meeting of the SFEFC Teaching and Learning Committee. That committee endorsed the broad approach, and this work has been moved forward as outlined in the SFEFC circular FE/04/2002. This work therefore has the support of guidance from the SFEFC in following through the findings, and has an allocation of £250,000 to support implementation.

Key points arising from section 9.4

- Staff in colleges were broadly happy with the support materials and activities in place for the pilot work.
- There was a desire to extend the training and support to all colleges in a second stage.
- The SFEFC were satisfied with the work done, and followed this up with a circular to the sector and additional funding.

In terms of the research objectives, this section raises the following issues.

- As an action research project, the sharing with the profession, change in guidance and feedback on revised practice were required elements of the work
- The feedback indicates that the findings have been accepted and adopted in terms of changed professional practice, an essential output of an action research study.

10 Lessons learned from the research activity

10.1 Review of approach and implementation

The research activity went to plan, in general, with a number of minor problems to meet the time-scale. This, of itself, was not too great a surprise, as the time-scales set for the work were very ambitious, and commissioned research to underpin development work will always have tight deadlines associated with it.

In describing the work as going to plan, this does not conflict with the reflection that this was an 'untidy' study where there was a plan, but it was iterative and expected to adjust. To simplify, each phase of the work led to findings that determined the plan for the following phase. Being a vocational study based on changing practice in FE, the implementation and planning of activity also required an alignment with policy initiatives. This required, for example, that the fieldwork on the IT Standards should not be developed until the work on improving the academic PIs was complete and in place.

In addition, the tensions of the sometimes conflicting roles of researcher and practitioner required to be considered and reconciled on many occasions. As an example, the work on the literature review and the theoretical models for both the academic PIs and IT support PIs should be conducted before the fieldwork taking the role of the researcher. This would allow a consistent model, a comparison of findings, and potentially a linking or alignment with the recommendations and approaches. However, the role of practitioner promotes a view of doing the IT literature review later in the work, at the time that it is needed, allowing it to be 'fresh' in the mind and easier to use.

Being objective and acting as a team leader and 'defender of the objective process' was a great challenge. There were many times where it was tempting to interpret information for people to speed up the process. However, there is clear evidence that this general objectivity was in place, and provided benefits. One

example of this was the testing of the interview questions in Phase 1. After the questions were tested, the subtle differences in the answers given led to the development of the 'scenario questions'. Without these questions, the fact that people were interpreting common terms to mean different things would not have been clear.

The literature review was, curiously, not made much easier using the internet. The internet allowed the identification of very many other interesting resources, which were then found very difficult to track down. This often left the author with the feeling of not doing as thorough a research job as they could be doing. On the positive side, it did allow easy access (out of hours) to a huge range of free resources. This was also complemented by the easy access to e-mail to administer the work, work collaboratively on documents, and check out ideas and findings with other professionals.

The literature in this area of work is relatively new. This was a great surprise, as the author had always been familiar with the concepts within this study in their professional life, and assumed it to have a long and well-researched history.

The writing up activity was a greater challenge than expected. The author had developed a style and discipline to write brief, factual reports. A study such as this requires reflection, consideration, balanced viewpoints, and occasionally no clear result or conclusion. This caused serious problems in writing the report, and made the feel of a continuous flow within the report more difficult. One strategy developed to help balance the fact that not all writing constructed a logical argument to lead to clear conclusions was the addition of "key points". The author ended each section reflecting upon key points raised within the section. This is a style of approach more suited to a textbook rather than a study, however, it does seem to help to hold together the logic and flow in what is a complex study.

In essence, the lesson of the difficulty associated with writing in a flowing style is a very harsh one. It is quite simply that the author is not practised and skilled in writing long, complex academic text. The extensive experience in producing handouts, reports and briefing papers appears to have actually become a barrier to effective academic writing. This difficulty in making text 'flow' is not one which is easy to deal with through more considered editing. However, it is evident that the two contributory elements of practice in writing and peer review and feedback are appropriate and helpful mechanisms. These have produced some reflection and learning, and indeed changes of habit.

Key points arising from section 10.1

- There is a tension between the roles of researcher and practitioner.
- There is a strength in objectivity and robust methodology.
- Writing in the appropriate style was, of itself, a challenge.

10.2 Reflection upon findings

It was not a great surprise to find that there is in general a poor understanding of PIs and benchmarking with FE. However, the extent of this poor understanding was a great surprise, with the poorly informed views of senior managers being the greatest disappointment.

It was encouraging to see how the issues faced in FE were very similar to those faced within other sectors and other countries. It is also encouraging to see the extent to which the common threads of answers and improved application are emerging.

Self evaluation within FE is central to improving quality, and this approach can be built upon a benchmarking model. It is encouraging to see the literature suggesting that this is likely to be a successful approach if a number of key issues of implementation are addressed.

The value and influence of the findings have been validated through the responses to the research by the key agencies.

- SQA have taken account of the early findings, and specified changes to the Awards Processing System to encompass a fail result, and taken on board several other changes to access to information and information management.
- HMI Audit Unit commissioned the work to be delivered as training to HMI, and to quality managers in the FE sector. This took place in May 2000.
- SFEFC have considered the findings, and intend to use the work directly. They asked for electronic versions of the appendices, as they issued the proposed revisions as an SFEFC Circular in May 2000 to define (revised) PIs for colleges. SFEFC also want to discuss a more rigorous training and monitoring process for the use of PIs.
- SFEFC have adopted the IT support model and invested £330,000 in publication, training and support for implementation.

Key point arising from section 10.2

There are important findings that have been widely adopted.

10.3 Reflection upon professional development

The impact of this work has had upon the author's professional development is difficult to summarise. However, it can best be described through looking at specific experiences and activities that made a contribution to my knowledge, skills and competence. These activities were:

- being open minded in research;
- leading a research team;
- doing (and writing) a literature review; and
- using the Internet for an open research enquiry.

10.3.1 Being open minded in research

The author's previous experience of 'research' activity has been very focused, looking at (for example) how American Community College students fund their learning. In this type of enquiry, there are clear facts and answers to be found. The skill in this task is to find and/or verify key facts quickly. This was also written up as an internal report or short article (published in *Broadcast*).

It was difficult to approach this work in a more open minded and objective way. For example, the author tried not to start with the assumption that PIs were a 'good' thing, or would be usefully applied in colleges. This stretched further to avoid assumptions based on anecdotal evidence or limited, unstructured experience. For example, the author did not assume that college staff would welcome PIs, or calculate them correctly. This more scientific approach paid off, as the college staff the author tends to deal with in their day-to-day work is generally skilled and enthusiastic practitioners. Hence, the author has been getting a more positive picture through personal experiences than a researcher would typically find.

Further, the experience made it clear to the author that sound objective methodology takes time, and an ability to try to see situations from a variety of

perspectives. This included being sure of evidenced judgements, and being able to differentiate between belief, opinion, expressed view and fact.

10.3.2 Leading a research team

This was a surprising aspect of the experience. The author has, for some years, been a manager, and led teams in a variety of settings. However, the challenges of leading a research team included elements which were different to their prior experience, such as:

- the role of keeping the team thinking openly and objectively;
- the difficulty in keeping the team from interpreting information through its own attitudes, perceptions and beliefs;
- the different recording and writing styles of the range of skilled individuals;
- the surprising lack of correlation at times between intellect and understanding; and
- the real difficulty of keeping people 'in step', and working to deadlines.

10.3.3 Conducting (and writing) a literature review

This was the author's first experience in dealing with a thorough and academic review of the literature. To date, the author has used literature for specific references, establishing key facts and checking, and did not fully appreciate that more fully reviewing a literature would be such an unstructured and difficult activity. The lack of common concepts and language in the discipline made judgements, comparisons and progression difficult to track.

The author has developed a higher level of skill in the use of literature, the use of the internet, and the methodologies of social science research. Where the author has a social science background, it has been some time since they applied the knowledge and skills developed in their first degree. It would be fair to say that internet based research is a new skill developed since their early education. In this work, they had to learn to be more structured and disciplined in enquiry to avoid using an inordinate amount of time.

10.3.4 Using the internet for an open research enquiry

The internet is a very useful reference tool, and in that role is fairly easy to use. However, as a research tool, it has a number of challenges associated with its use. The first challenge is which search engine and key words to use. For example, the use of the terms “Performance Indicators” gave rise to many thousands of sites dealing with artistic or theatrical performance. Making the search more specialised by using Boolean enquiry terminology (such as “Performance Indicators” AND “Benchmarks”) still provided a huge number of sites, whilst missing some key sites that the author was already aware of.

The author has developed skill in this area, and has developed slightly more efficient approaches. Tips and techniques that are now part of their repertoire include:

- using ERIC database and digests to source key (North American) literature;
- using more specialised search engines;
- using the web creatively, for example using Amazon.com to check whether key authors have published more recent materials; and
- using the TES and THES websites to check current articles on key areas of work.

These combine with a greater level of competence in using the internet in a time efficient way, and making the best of working off line.

In summary, this project has extended the author’s experience and professional development in a variety of ways. They have a greater respect for the value of research, and sound methodology. They are also more aware of the extent of information now available through the internet, and the associated difficulties in “marshalling” this information in a useful way. This is also the author’s first experience of writing as a researcher. Writing in this research style has been exceptionally difficult for them, as their previous experience of reports or short articles required a simple, logical (and easy) style, without the reflection or

‘worrying’ over an issue. The author has also developed a personal well-founded knowledge base and expertise that is known and used to support development within the sector.

The value and benefit of this research project has been clear. It has linked the author’s prior management experience and expertise as a practitioner with skills required researching and developing longer-term strategic projects. The learning that has taken place previously in this degree has established my ability to manage operational improvement within a college setting. This project helped me to focus on a wider, longer term, national perspective. This will have a positive influence on my ability to function professionally at the highest levels of FE management.

Key points arising from section 10.3

- Research is not always a straight forward as finding clear answers.
- Working on a literature review is “messy” and unclear.
- Leading a team in research is different to leading a professional training team.
- Using the internet added to the enquiry but needed structure and discipline.

10.4 Reflections upon the impact of this work

The work has been conducted over a three year period and over this time has had an impact on FE practice. The impact has been manifest in many ways: influencing key thinkers; influencing key agencies; defining standards for use in quality improvement; underpinning government guidance; influencing funding activity; and enhancing the use of evidence based policy making.

10.4.1 The impact of phase 1 work

Phase 1 was an objective study aimed at checking how robust the PIs were. The study showed that they were not reliable, and that there should be further work. This informed HMI practice, and the understanding coming from this work was shared in a training session with post school HMI. In addition, the information shared with agencies such as SQA encouraged them to produce PI information with appropriate contextual information to assist with quality improvement. The guidance from this work persuaded SQA to release national Unit pass rates to colleges, a major piece of useful benchmarking information.

10.4.2 The impact of phases 2 and 3

The research to look for improvements in the definitions and application of PI and benchmarking information was extremely influential. HMI and the Scottish Office accepted the recommendation. The newly established SFEFC issued the proposed revisions as guidance to colleges, embedding them in FE practice. SFEU provided a programme of national training events providing support for every college in the country to understand, apply and seek quality benefits from the use of robust PI information.

10.4.3 The impact of phase 4

Phase 4 was a major step in using the research and underpinning theory to engage a standards based model in an area of college activity where there had been no systematic process of monitoring or improvement. The research underpinned a model, and was successful in a bid for £80,000 of development

funds to implement. Indeed, SFEFC adopted this work as the only model where it had previously stated a willingness to support a variety of developments. The findings were endorsed and adopted by all the key agencies, and a further £250,000 was made available by SFEFC to embed the findings across all colleges. This work again, has underpinned a nationally adopted model, developed through robust fieldwork with Scotland's colleges. The model is supported by SFEFC through circulars and guidance.

10.4.4 Summary of impact

This work has underpinned the development of the quality improvement model for Scottish FE. The outcomes have been adopted by all colleges, SFEFC, HMI and SFEU. The improvements to the quality model in academic work have been important, building better definitions, improved practice and enhanced confidence across the sector.

The move to use a similar model in support services is a great leap forward, looking at quality improvement beyond the scope of inspection. Where the development of standard in IT have, of themselves made an impact, it is anticipated that this will lead to similar models and training being developed for other key support services.

11 Conclusions

Within this section the findings and conclusions are pulled together and considered. To do these will firstly involving look at the enquiry questions and using the evidence, information and views developed, responding to those questions. Next, the question of what the literature review and comparative studies added to the work is addressed. This is followed by an examination of the contribution to professional practice of the work. As an action research study, it is also important to conclude with an exploration of where the study leads to in terms of further thinking and research.

11.1 The enquiry questions

11.1.1 Are the current performance indicators understood by college staff?

The primary source of information here is the field research and the conclusions here were quite clear. There is some detail in section 7.6.1 indicating the direct findings of the field research related to the specific remit.

The key conclusions in answer to this enquiry are that:

- the performance indicators in use at the beginning of this study were not valid or reliable and were inconsistently applied across time, across institutions and by differing staff; and,
- college staff were generally ill informed on the range of information available for national comparison.

11.1.2 Are the current performance indicators used effectively in Further Education?

As indicated at the start of the study, the term “effectively” is value laden, so any conclusions drawn are in the context of a general common understanding of “effective” use. Conclusions in this aspect of the work can be drawn from the literature and comparisons with the experiences in other sectors as well as the

field research. The most useful secondary research information is outlined within section 4 of this study. The more detailed findings from field research are summarised within sections 7.6.1, 8.3 and 8.4.

The key conclusions in answer to this enquiry are that:

- there is some evidence of effective use, but clear areas identified for improvement;
- there are many lessons to be learned from the use of PIs in other sectors such as the health sector; and,
- there are some interesting lessons to be drawn from international experiences, such as that from Community Colleges in America.

11.1.3 What improvements can be made in the use of performance indicators?

This enquiry is answered primarily through the field based research in phases 1, 2 and 3. The conclusions and recommendations can be found in section 7.6.1 and 7.6.2 and in section 8.5. This field research was itself supported by the literature review, informing the questions, ideas and models considered in the improvement process. Similarly, input from international contributors through visits, articles and direct discussion helped shape the proposals.

The key conclusions in answer to this enquiry are that:

- the definitions of the 5 key performance indicators should be clarified, training and information made available to college staff on their use and a degree of monitoring be provided;
- the current range of performance indicators be extended, following further work, to consider “inclusion” and “value added” indicators for teaching, as well as a general extension to the use of performance indicators to college support services; and,

- wider publication and availability of benchmarking information (restricted to colleges with a degree of anonymity) would be helpful in supporting better use of the information.

11.1.4 What can the literature tell us about developing quality standards for IT support?

The general literature, specialised literature and literature developed through major initiatives and projects are written up within section 5 of this study. This was an area where a great deal of information, often contradictory, informed the thinking and the planned field work.

The key conclusions in answer to this enquiry are that:

- there is no literature on quality of IT support;
- there are useful elements of advice on the strategic implementation of IT projects available from the wider literature; and,
- the wide range of IT projects and initiatives have, in practice, provided a weak literature on general theory with little to be learned for developing future practices.

11.1.5 Can useful quality improvement mechanisms for IT support standards be modelled, developed and tested?

The answer to this question comes from the field work outlined in section 5 of this study. The literature reviewed helped to shape the initial thinking on standards, the field work moved these initial ideas on to a practical model.

The key conclusions in answer to this enquiry are that:

- standards can be developed (and have been, outlined within the appendices of this study); and,
- standards have been tested and adopted for college IT support.

Key point arising from section 11.1

Through the research and field work activity, answers have been developed for each of the five initial research questions.

11.2 What this work adds to the literature

11.2.1 A contribution of primary research

The work done in all phases of this study provide an information base for any study into the further development of quality. The study tested (for the first time) the appropriate application of PI definitions in a sector. In doing this, a methodology was developed and conclusions drawn that may have wider application in other sectors as well as clear application in Scottish FE.

This initial work also creates a fundamental challenge to the use of quality systems and methodologies that rely on PI data. It raises the issue that the validity, reliability and general consistency may be flawed. This raises the question of whether change measured by PI data may be explainable by the errors or imprecision of recording PIs. However, the study also provides a methodology and model for testing the recording of PIs. That methodology may be directly replicable.

There is also substantial field work taking draft standards (for IT support) and developing these for wider use. The work covered a methodology for the development of the standards and a methodology for disseminating and adopting standards across the sector. This methodology involved wide consultation and is likely to be a strong model given the extent of contribution of key figures from the sector.

In developing the draft standards for IT support, there was also substantial fieldwork on the training, development and support needs in this area. This will be helpful information to support the introduction of PIs and self evaluation in other support areas.

The IT standards themselves are a positive and interesting contribution to quality improvement. This is evidenced by the fact that some English colleges and

American colleges (who have accessed the website) have already expressed an interest in introducing this model within their own institutions.

General publication and dissemination of this work has been wide. The SFEU website, open for public access (and typically having 3,000 user sessions each month of over 20 minutes on average) has held most of the information. The SFEFC have published findings from phases 3 and 4 as annexes to circulars, instructing colleges to adopt the PI definitions and the IT standards. The events disseminating the findings have been attended by all colleges and adopted by all the key FE organisations.

11.2.2 A review of secondary research

This study pulls together a wide review of secondary research. In addition to a fairly traditional literature review, wider use of the internet and a review of recent projects and initiatives has helped to pull together and compare ideas. This is a relatively unique area of work, as FE has not been the focus of much research compared with school provision.

The literature review pulls out insightful recent work from authors such as Bates and Braithwaite who make a real contribution to thinking. Where their work was not designed for Scotland or FE, the ideas have helped underpin thinking on strategy. As technology is an area of rapid development, it is important to have recent and comprehensive reviews of research and written work.

Within a professional doctorate, it is important that the work impact widely on professional practice. The literature review has done this in a number of ways: the review has been published for the sector; the review has been made available to SFEFC; workshops have been done specifically on the literature review (with 31 participants); and, the review has underpinned the developed standards.

11.2.3 Insight and innovation

This study is more than a small study to investigate and test theories. It includes within the action research cycles theory building, theory testing and the development of professional guidance adopted across the FE sector. In this study, clear research, robust field work, insight and innovation all make contributions to moving forward professional practice.

Insight was evident in the initial phase to test the consistency of interpretation of PIs. The testing of the methodology is common practice, but the subtle ways in which interpretations could be different required insight borne of experience and astute judgement. The sound methodology of testing people with different roles in the college was simply good research practice, but anticipating that scenario questions would highlight differences was insightful judgement.

There is also insight to be seen in the analysis of the literature. It was insightful and original within this study to evaluate a weakness of research being the inability to recognise the technology many authors were writing about as dynamic and changing as it was being described. This observation that IT was dynamic and changing as it was being described was not recognised by many authors. Most authors characteristically recognised its rapid development and future potential, but did not write with the understanding that technology and practice using it changed on an almost daily basis.

In addition, the study uses many innovative elements. These include:

- using extensive internet search and video-conferencing links in research work;
- creating a convincing sample of colleges based on profiles;
- using a website for information and training support; and
- changing nominal group technique methodology to effectively gain expert views.

This has led to a robust and compelling set of publications, leading to the adoption of changed professional practice in Scottish FE.

11.3 What this work contributes to professional practice in FE

An unusual aspect of this study was the role of the author in seeking to make a real and effective contribution to the wider field of professional practice (concentrating on quality improvement) in Scottish FE. This can be summarised in looking at changed practices within each of the key organisations, including FE colleges.

11.3.1 Changes in practice within SQA

The involvement of SQA staff in the early stages of this study had a number of effects. The early stages of the work gave a renewed confidence in the reliability of the accuracy of SQA records of results. There was also robust feedback from colleges on the desire for national performance information from SQA for benchmarking purposes. This was made available by SQA and circulated (through SFEU) to all colleges. This information, providing Unit pass rates (used in colleges as the SARU PI) for all NC and HN Units was used widely to compare results. SQA undertook to develop an extranet service allowing colleges access to this information long term. However, the events of 2000 delayed this as an IT and information priority for SQA, and the statistics are only now being made available on the delayed “SQANet” extranet system.

The early stages of the work also identified that performance comparisons were difficult as the SQA recording and resulting software had only two options, “pass” and “withdrawn”. The study identified that there was a range of reasons why a student would be entered as withdrawn, including variations such as mistaken data entry, varied administrative practices, student sickness, course changes and candidates attempting and failing assessments. To have useful PIs, it was necessary to refine “withdrawn” and to distinguish students who attempted assessment unsuccessfully (failed) from other withdrawn students. SQA changed the Awards Processing System software and data entry to add a “Fail” option as a recorded result following this study.

11.3.2 Changes in practice within SFEFC/HMI

The early parts of the study were used to underpin the decision of HMI Audit Unit in deciding upon open publication of college results and PIs. As the work suggested that the results available were not valid and reliable enough for reasonable comparison, HMI Audit Unit decided not to publish.

The early findings also identified problems with PIs and developed information and training interventions to improve reliability and validity. The information, through refined and improved definitions circulated widely, was adopted directly by using the material from the study (appendix E of this study was taken and attached to a circular to colleges, and can be found on the SFEFC website at <http://www.sfefc.ac.uk/content/sfefc/festats/guidnote/0001/pis/piintro.htm>). The definitions from this work are found within SFEFC Circulars defining PIs. The SFEFC also funded a range of training events aimed at training staff in the interpretation and use of PIs.

SFEFC have also supported the idea of extending self evaluation to support services and funded the work on ICT standards within this study. They have adopted these standards, and asked the sector to use the standards, providing funds for colleges to involve themselves in the work. In addition, funding had been made available to SFEU to provide information and on-line support for these standards (accessed through SFEU website at www.sfeu.ac.uk). This is a new practice for SFEFC, who have, to date, only supported their own internet information for colleges.

HMI have used the findings of the study to consider their own information sources, and in helping them to form judgements. Sharing the findings of the study with all post-school HMI within the annual training days for HMI allowed greater reflection and more effective use of information. In particular, the better PI information and availability of benchmark information from SQA has allowed

a better information base for comparative judgements when determining a grading for college provision.

11.3.3 Changes in practice within SFEU

SFEU staff have had extended experience in action research, still relatively unusual in FE. Policy development has often been fed by consultation (such as work on Higher Still/National Qualifications) or by research using fairly 'traditional' scientific methodologies (such as work on funding methodologies and subject weightings). The action research approach has provided a balance of ownership and rigour that has been adopted for a number other projects and by a wider range of staff. For example, this action research approach, rather than consultation, is currently supporting work in revising the design rules for Scottish Group Awards.

The findings of the study have also fed a number of publications and training events. There are now a number of staff involved in training for colleges using materials from the study to underpin the work. In addition, staff are now developing pilot work programmes using self evaluation approaches in other areas of support work.

11.3.4 Changes in practice within Scottish FE colleges

FE Colleges now have clearer definitions of PIs, and all staff have easy access to these definitions through the internet. Many national and regional training events have helped a wide range of staff to discuss and use the PI information. Self evaluation is now widely conducted with more confidence in the information base and comparative judgements.

The latter work on the IT support standards has been widely adopted in colleges. National events, regional workshops, video-conferencing and web based materials have been used to ensure access to the information. This work with IT

support staff has been developed as a pilot to underpin self evaluation work with other important support services.

11.4 How do the conclusions influence further thinking?

The conclusions point to answers to questions and changes in practice. As with all action research, this leads to further reflections and areas of future enquiry. This can be considered by looking at surprising elements of the work, inconclusive elements of the work and interesting observations that might justify further analysis. These headings help to summarise the reflections on the work, pointing to potential further work and development

11.4.1 Surprising elements of the work

In preparing for this study, there was an expectation that the literature in many of these areas relating to quality and management must be well established. It was quite surprising to recognise that the various paradigms, often very different perspectives, not only had different views on concepts such as quality, but also used the same terminology to mean different things in different publications.

A simple and current example would be to look at 'self evaluation' and take a pragmatic perspective, looking at traditional objective scientific methodology. This approach underpins the 'quality assurance' school, where consistent and reliable judgement characterises quality. Using this paradigm, the reporting used in English FE colleges giving rise to a "Self Evaluation Report" giving a scoring and grading using set procedures. This was observed in the visits to the two English FE colleges within this study. The score, in this paradigm, IS the self evaluation. This is similar to the HE Research Assessment Exercise where the rating is the result and centre of attention for practitioners. In this paradigm there is an established procedure, rating and ultimate score.

This contrasts with a paradigm characterised within social research, where perceptions, feelings, beliefs and ownership issues define the perspective. From this perspective, the qualitative reflection and the process of review are at the core of the process. In this process, the judgement of worth and the actions for improvement ARE the self evaluation. Many self evaluation reports in Scottish

FE colleges are produced without a grading, as this is seen as less important than the judgements of worth and action for improvement. This characterises the reporting in Scottish FE where self evaluation models, based on the 'reflective practitioner' ideas of writers such as Schon, are the ultimate in quality (1983). In comparing and contrasting these two schools of thought, the idea of 'good quality' as it would feature in the literature would mean quite different things, one rooted in consistency of approach, the other in reflective practice and change.

The literature review and comparative work were, to some extent, limited in their contribution to thinking as a result of difficulties such as the one illustrated in using common meanings for many of the terms. There is a real challenge in looking at the literature and being clear about consistency in paradigm or in detailed meaning. It is for this reason that visits, meetings and discussions with practitioners in other countries and in other sectors were required to give a depth and comparative perspective beyond the narrative and text form. One strong example of this stems from the example above where both English FE colleges had written materials stating they had conducted a self evaluation. In practice, when examined on the visits, these reports were described by Scottish FE staff as "self assessments" following a very similar pattern to the SQMS assessment Scottish colleges conduct. As these exercises result in a scoring and compliance report, the Scottish staff did not consider them to be evaluations.

11.4.2 Inconclusive or ambiguous elements of the study

The initial work on revising PI definitions provided a generally consistent and accepted set of findings. Where the difficulty arises is in actually changing and improving practice in the use of the definitions. The reflective model of action research led to the judgement that wider dissemination of information and training of large numbers of staff would make a major contribution to achieving the improved practice. Experience of practitioners has led them to this

conclusion and the methodology supports this as an appropriate way to make the decision. However, what is still inconclusive is whether this information and training intervention had the desired effect. There was no formal evaluation of the impact. In terms of the methodology adopted, it may have been better to have another cycle of work leading to a review of this action. However, such was the confidence of the author, the funding body and others that no review was implemented at that stage. Anecdotal evidence through HMI gave a confidence that colleges were better informed and more accurate in their judgements. However, there could be many explanations for this view. For example, having had HMI and college managers subject to similar guidance and training, they may all be making similar and consistent mistakes.

The study did not aim to evaluate the impact of the intervention, so did not fail in its intention. However, this area could, in the longer term, be subject to some kind of confirmation process to ensure the anticipated outcome of improvement is achieved and to provide evidence that the model of intervention using information and training is a robust model, fit for the purpose intended.

11.4.3 Interesting observations

A number of interesting observations have emerged from the research and study activity. One key area where this has manifest itself is in the adoption of models that use PIs as central in defining quality standards and models that use QIs as central in defining quality standards. This may be a result of the differing underpinning philosophies.

The PI and QI underpinning philosophies may be somewhat different, PIs being dominant in the 'scientific' paradigms and QI being dominant in the 'reflective practice' paradigm. These simplistic titles represent very different perspectives on enquiry, research and practice. We will use these brief descriptions and titles to describe what might be better represented as a complex continuum of views from the entirely objective to the entirely subjective. PIs have developed from

the school of Scientific Management and have a relatively long history. It sits comfortably with management activities such as work-study and accountancy where numerical measurement and precision are paramount. In education, this perspective of judging quality through a numerical measure is often confusing to practitioners because of issues surrounding the interpretation and use. At one extreme, pass rates (for example) are the absolute measure of quality and investment or change to improve quality must aim to improve the PI. This is often the model used to underpin policy decisions on public spending. In the scientific paradigm, the PI measure is the absolute focus of attention. In the reflective paradigm, PIs are only part of the model, however, in this paradigm, their use is very different as they are primarily used to diagnose and direct further judgements.

A practical example may help illuminate this difficulty. In colleges, the retention PI will be collected and recorded as a percentage. In the 'scientific' or 'quality assurance' paradigm, 100% retention would be the aspiration and would reflect the highest quality. In the 'reflective practice' paradigm, whatever the statistic, it is used with other information to help identify improvement. For example, 100% retention would suggest that the college may not have done enough to widen access, assessment may be at the wrong level, or not enough was done to challenge the students. Other information would be added to help determine which area for improvement required action. In reflective practice there is no ideal score for an indicator, all PI scores combine with other evidence to help focus priorities and actions for improvement.

Another surprising element of this study is the level of different views that obtain within the sector and across sectors. It is also quite striking to look across similar sectors and see how these different philosophies underpin the reporting. An example can be found in institutional responses to poor retention. In many FE colleges, a retention figure of 60% will prompt the college to redesign the course, alter the level of student support, or make a similar institutional

response. In Universities, a 60% retention rate will often be reflected as a disappointment in student performance, and indeed, is often endorsed as a sign of good quality and laudable maintenance of standards. This curiously differentiated response seems to stem from the differing underpinning philosophies of quality. It is surprising that such differing approaches obtain in similar public sector education bodies. Indeed, reconciling these different approaches (as is being attempted by the UHI Millennium Institute) is a very complex and difficult task.

This paradigm conflict is not in any way unique to education. There are similarities in the field of medicine. A Psychiatrist will approach mental illness with a scientific (or at least systematic) methodology. A prime target for improvement of a patient's condition for a psychiatrist is the removal of symptoms. Through scientific enquiry, treatments (often using chemical intervention) are judged in their success using measurable criteria, often related to symptoms. These might include things like physiological measures, time spent in silence, number of depressive episodes and number and nature of statements of belief. Clinical Psychologists, on the other hand, are more likely to seek treatments where success will be judged by different criteria, which may include self reporting by the patient. An indication of quality for the Clinical Psychologist will be the positive treatment of what is believed (by the patient or the clinician) to be the underlying causes rather than the 'simple' removal of the symptoms. Yet in spite of these differing approaches, both fields seem to be accepted as making a positive contribution to patient well-being and have a role within the health service. In this example, one practitioner may concentrate on short term priorities such as lowering blood pressure and reducing panic attack episodes. The other practitioner may concentrate on the longer term concern of reducing stress, strengthening coping skills, reconciling conflicts and preparing the patient to function without the medication provided for the short term relief of symptoms.

11.4.4 Issues requiring further investigations

Any action research project aims to change and improve practice. By its very nature, it does not aim to conclusively resolve, but rather to illuminate and progress. Therefore, it should be anticipated that from such work a number of issues requiring further investigation would emerge. Many of the issues to emerge within the early stages of this study were further investigated in the later stages. For example, having found weaknesses in the application of PIs, further work was then done to resolve the difficulties through providing clear definitions and disseminating these through publication and training. However, a number of issues have arisen in the later period of the study with some of these issues being more long term. These issues could have taken the work off 'at a tangent' had they been pursued within the study. Indeed, the value of having a well defined purpose and direction within action research is to help keep the work focussed and purposeful.

The strongest issue to emerge from this complete study that could be pursued further is a philosophical one. The underpinning issue of the appropriate paradigm or perspective on quality and the understanding of these perspectives seem to be a relatively unresolved matter. Public policy seems to be driven by a more scientific perspective, where performance against targets, PIs and 'tables' seem to characterise improved performance. Yet, many practitioners in education and many institutions characterise improved performance using more complex criteria. There is potential to investigate further to look at, for example, whether these different approaches can be reconciled, whether they both have something positive to offer, or whether policy debate would allow a new way to judge quality to emerge.

Further work on this might help illuminate issues such as providing a more consistent way of judging institutional contribution, whether PIs or QIs should be paramount in defining quality standards and how effort can be made more successful. As a philosophical issue, it is not likely that further work would lead

to a clear resolution, but greater understanding may be helpful. Just as food quality is judged through diverse approaches such as local authority food hygiene reports and stars on the Michelin guide, a clearer understanding of measures and criteria may help contextualise and improve judgements of educational quality.

The strongest issue that has emerged in the later part of the study that would benefit from further investigation is to examine the implementation of self evaluation in IT support. The understanding and use of the standards and the accrued benefits of the work should be considered. In addition, the related issue of extending the model to a wider range of support areas should be considered.

This work has helped to prepare appropriate methodologies and models to take work forward on these issues and mechanism are now in place to not only identify professional improvements, but also to support the implementation of findings.

Perhaps the strongest contribution this work has made to professional practice is to impact the thinking of many staff and managers in FE regarding how robust and useful self evaluation can be outwith the strongly interpersonal realm of learning and teaching. The systematic methodology used to improve the PI definitions and the scope and rigour of the work extending to IT has convinced many more people that quality improvement based upon structured professional reflection is a powerful tool. The concept of 'internal customers' in an institution having the right to the same improvements in quality of service has also had a profound impact. Having demonstrated this in a compelling way for IT support, this study is leading to a radical rethink of quality improvement beyond the simplistic '(external) customer satisfaction' model. The foundations are now in place for a more sophisticated view of quality and a radical change in quality improvement practice.

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Glossary

AACC	Association of American Community Colleges
ASC	Association of Scottish Colleges
EFQM	European Foundation for Quality Management
FE	Further Education
FEDA	Further Education Development Agency
FEFC	Further Education Funding Council (England)
FEQIF	Further Education Quality Improvement Forum
HE	Higher Education
HIE	Highlands and Island Enterprise
HMI	Her Majesty's Inspectors
ICLT	Information, Communications and Learning Technology
ICT	Information and Communications Technology
IRCOL	Inspection Regime for COLleges
IT	Information Technology
KETF	Knowledge Economy Task Force
MIS	Management Information system
MLE	Managed Learning Environment
NGfL	National Grid for Learning
NILTA	National Information and Learning Technology Association
PC	Personal Computer
PCSR	Post Course Success Ratio
PI	Performance Indicator
PLATO	Programmed Logic for Automatic Teacher Operations
SARU	Student Achievement Ratio by Unit
SE	Scottish Enterprise
SFEFC	Scottish Further Education Funding Council
SFEU	Scottish Further Education Unit
SHEFC	Scottish Higher Education Funding Council
SPAR	Student Programme Achievement Ratio

SQA	Scottish Qualifications Agency
SQMS	Scottish Quality Management System
SRR	Student Retention Rate
TQM	Total Quality Management
QLT	Quality of Learning and Teaching
QUANGO	Quasi-Autonomous Non Governmental Organisation

PROJECT SPECIFICATION PHASE 1

Benchmark Tables: A Feasibility Study of the Use of SARUs for Benchmarking Student Achievement in Further Education

Aim

To investigate the feasibility of using SARUs or a similar measure of unit achievement as a basis for publishing benchmark tables, which will inform course review, self-evaluation and quality improvement in the FE colleges.

Objectives

- 2.1 To produce data tables by academic year from existing college generated SARUs and from the SQA database of unit registrations and achievements, which display national norms and the highest 10% of colleges (the benchmark).
- 2.2 To investigate the appropriateness of using a number of units (e.g. 12) taken by an individual as a measure of achievement.
- 2.3 To investigate the feasibility, and include in these tables, wherever possible, an analysis by level (i.e. HE/FE), subject, mode of study, age cohort and geographical region. As mode of study may not be available from SQA, matching SQA data with FES returns may be necessary.
- 2.4 To recommend an existing subject group, cognate group or superclass list or to construct one which is meaningful and useful to FE colleges for benchmarking purposes at corporate, departmental/sectional and course/programme team levels and which can be readily produced from the SQA database and college systems used for calculating SARUs. Due account should be taken of Scottish Group Awards.
- 2.5 To investigate the feasibility of producing, in electronic format, more specific tables on each unit with same or similar analysis parameters as in 2.1 and 2.3 above.
- 2.6 To assess the integrity, robustness and comparability of college-supplied data on SARUs by comparison with SQA unit registrations and achievement data; to identify any major causes of inaccuracy in college-supplied data and to recommend action to improve data quality. It is expected that a representative sample of FE colleges will be used. This is unlikely to involve fewer than six colleges.

2.7 To recommend rules for the exclusion of data that is not statistically significant or could in exceptional circumstances result in the identification of individual students.

2.8 To investigate any difficulties in including S/NVQs (especially work-based S/NVQs), open, distance and flexible learning, NRQs and any other anomalous or problematic modes of delivery or assessment, and to make recommendations on how they may be included in benchmark tables.

2.9 To investigate the CMIS resource implications.

2.10 To assess the planned changes to the SQA database in terms of their likely impact on the production of benchmark tables.

Output

3.1 A supported event outlining the project to colleges and seeking feedback on proposals and methods.

3.2 Production of data tables by academic year (for 3 years) based on existing 'SARU' information submitted to SOEID which display sector norms and top 10%, with analysis by level (FE/HE), subject, mode of study, age, cohort and geographical spread.

3.3 Production of data tables by academic year (for 3 years) based on existing 'SARU' information recorded by SQA which display sector norms and top 10% with analysis by level (FE/HE), subject, mode of study, age, cohort and geographical spread.

3.4 Production and publication of a detailed report with executive summary that reports upon the:

- evaluation of "best fit" subject groupings.
- feasibility of producing electronic tables.
- integrity and robustness of data, data sources and collection methodologies.
- recommendations rules for exclusion of data where appropriate.
- methodologies for dealing with benchmarking work out-with the scope of this pilot study i.e. S/NVQs, distance and flexible learning, and NRQs; and
- options for further developing and using the benchmarking process.

In these areas, full account should be taken of minimising workload and additional data manipulation, and the likely impact of Higher Still developments.

3.5 A supported event presenting findings.

INFORMATION PREVIOUSLY AVAILABLE TO USERS

Both the SQA and the SOEID have previously published a variety of information that college staff could use for the purposes of quality improvement within colleges. The Scottish Office Circulars No: (FE) 14/95 gives a detailed definition of Student Achievement by Unit of Learning (SARU) which facilitates internal analysis of student achievement and supports internal comparison. An amended definition is given in Circular No: (FE) 10/96. In addition, the publication 'Further Education in Scotland – Report by the Secretary of State for Scotland' provides a tabled analysis of SARU for 1995/96 Further and Higher Education Units for selected programmes.

The SQA publication 'Annual Statistical Report 1997' provides detailed information about NC module entries for 1996/97 (between 1 August 1996 and 31 July 1997). This information includes the following.

- Module entries grouped by Superclass information on candidate sex, age and type of centre.
- Tables of the 50 NC modules with the most entries for all candidates and college candidates.
- Results by Superclass (known by December 1997).
- Breakdown by candidates entry according to entries by number of modules with information on sex, age, and centre type.

The report also provides information regarding HN unit entries. The information is limited to entries by age, sex, and centre type; top 50 HN units by entries; and aggregate results for HN units by age and sex. Limited information is also available on SVQ entries and details award achievement by levels and areas of competence.

It is unfortunate that the information given by both the SQA and SOEID was on higher level aggregated results i.e. SQA results are given by Superclass groups, and that SOEID results are given by aggregated Further and Higher Education selected Programme groups. This information is of very limited use to course leaders as it does not support external comparison at module/unit level, and is of more value to curriculum managers. In addition, from discussion with senior managers at the launch event for the project, it appears that the above information is not widely known about or used.

PHASE 1 COLLEGE INTERVIEW QUESTIONS & RESPONSES

Q1 Is there a value in knowing the sector average for SARUs (by individual unit)?

Curriculum/Quality Managers Responses

All interviewees welcomed the availability of sector average data for SARUs

- must be based on data provided to SQA regarding entries and results to ensure consistency and reliability
- has limitations
- allows college comparisons against national averages-welcomed
- useful in complementing external verification/moderation
- supports development planning process
- assist college promotional strategies

Section Head/Course Team Managers Responses

89% of interviewees welcomed the availability of sector average data for SARUs

11% of interviewees did not welcome the availability of sector average data for SARUs

- useful for the identification of national issues of units that may have problems regarding content or assessment requirements
- can also support internal comparisons
- only of value if all colleges apply same rules for enrolment
- interesting to compare like with like

Q2 Is there a value and use for identifying the 'top 10%' of colleges, unit by unit?

Curriculum/Quality Managers Responses

33% of colleges placed value and use for identifying the top 10% of colleges by unit

67% of colleges inferred no value

- creates a league table culture with associated 'fears' and disadvantages
- range data more useful
- internal assessment could become SARU driven with borderline candidates being excluded from the assessment process in order to maximise college achievement
- identifying the top 10% may give the impression of examples of quality provision however it may be possible for those colleges identified to be dropping their quality standards
- useful to compare and contrast college data to support further analysis
- colleges require as much information as possible to support quality improvement initiatives
- top 10% would identify good practice within the sector allowing colleges to share experiences to improve quality

Section Head/Course Team Managers Responses

44% of colleges placed value and use for identifying the top 10% of colleges by unit

56% of colleges inferred no value

- highlights best practice for dissemination within sector
- limited use
- no concern regarding league table arguments
- data should be available on the achievement of all colleges
- creates a competitive system, which will be detrimental to all students as concern regarding lowering of standards

Q3 (a) In order of preference, rank the option below which would be of most use to you

- A Publish the top 10% college names for each unit/module by pass rate
- B Top 10% level is published, with the college names available on request
- C College table to be constructed with college groupings (such as community colleges, rural colleges etc.), and data presented for the whole group
- D Publish mean, highest pass rate, lowest pass rate and cut off point of top 10% for each unit/module
- E College tables to be grouped/constructed to consider geographical location

Curriculum/Quality Managers Responses

78% of colleges ranked option D as 1st choice

22% of colleges ranked option C as 1st choice

56% of colleges ranked option C as 2nd choice

22% of colleges ranked option A as 2nd choice

44% of colleges ranked option E as 3rd choice

67% of colleges ranked option B as 4th choice

44% of colleges ranked option A as 5th choice

56% of colleges ranked option D as 1st choice with option C as 2nd choice

44% of colleges ranked option D as 1st choice with option C as 2nd choice and option E as 3rd choice

67% of colleges ranked either options B and A within the 4th or 5th choice bands

Section Head/Course Team Managers Responses

33% of colleges ranked option D as 1st choice

66% of colleges ranked option C as 1st choice with option D as 2nd choice

22% of colleges ranked option B as 2nd choice

22% of colleges ranked option C as 3rd choice

67% of colleges ranked either option A or B within the 4th or 5th choice bands

11% of colleges recorded options A, B, C, E as having no value

(b) Any other factors or options we should consider on constructing this data?

Curriculum/Quality Managers Responses

- preferred SARUs data to be published in quartiles
- publish mean only
- generating groupings of colleges problematic, many colleges are of an individual nature and some are highly specialised
- combination of D and A more useful
- should consider publishing data on top 50 modules/units and ranking them by achievement

- mode of attendance data would be useful to compare related study groups within unit achievement
- median
- data should be produced in a format that is practical for colleges to use
- a method of assessing added value would be of great value

Section Head/Course Team Managers Responses

- ranking colleges of similar size and possible similar curriculum
- age segmentation
- should consider deprivation and support issues
- mode of study/attendance
- should consider requirements of professional bodies who only require partial achievement of certain work-based units

Q4 If SARU data was published, which method of classifying/structuring the material would be easiest to use?

- A Superclass
- B Cognate Group
- C Scottish Group Award heading
- D Alphabetic and numeric (in the style of the current catalogue)
- E Any other

Curriculum/Quality Managers Responses

67% of colleges preferred option D

22% of colleges preferred option B

11% of colleges preferred a combination of option B and option C

- 56% of colleges expressed a demand for data to be published in an electronic format and search engines to be provided by the SQA
- published data should not be limited to one classification
- data should be supplied in a format to allow users to extract information to meet their own individual needs

Section Head/Course Team Managers Responses

22% of colleges preferred option A

22% of colleges preferred option B

22% of colleges preferred option D

11% of colleges preferred option D combined with option B

11% of colleges preferred option C combined with option B

11% of colleges preferred option C

- cognate groups for familiarity and used for associated IV/EV purposes
- B used at present
- D useful as back-up to B
- B identifies core subjects

Q5 If pass rate data was published (NC and HN) please rank the following options in terms of their usefulness

- A Individual units/modules
- B Nationally recognised group awards
- C Other

Curriculum/Quality Managers Responses

66% of colleges selected option A as 1st choice
33% of colleges selected option B as 1st choice
100% of colleges selected option C as 3rd choice

- option A must contain all appropriate codes e.g. superclass, cognate group, group awards, etc.
- a combination of A and B would be desirable

Section Head/Course Team Managers Responses

44% of colleges selected option A as 1st choice
44% of colleges selected option B as 1st choice
11% of colleges ranked A and B as 1st choice
100% of colleges selected option C as 3rd choice

- B useful for comparisons in HN awards
- Non-SQA information has to be included

Q6 Which method of classification/structure of material (from the option marked A to E below) would be most meaningful and useful to you for benchmarking purposes at the following levels?

Corporate level

Departmental/Sectional level

Course/Programme Team level

- A Publish the top 10% college names for each unit/module by pass rate
- B Top 10% level is published, with the college names available on request
- C College table to be constructed with college groupings (such as community colleges, rural colleges etc), and data presented for the whole group
- D Publish mean, highest pass rate, lowest pass rate and cut off point of top 10% for each unit/module
- E College tables to be grouped/constructed to consider geographical location

Curriculum/Quality Managers Responses

Corporate level

22% of colleges identified option D as being most useful and meaningful
 22% of colleges identified option C as being most useful and meaningful
 11% of colleges identified option A as being most useful and meaningful
 33% of colleges identified option A combined with either C, D or E

Department level

33% of colleges identified option D as being most useful and meaningful
 11% of colleges identified option A as being most useful and meaningful
 22% of colleges identified option A with either D and/or B as being most useful and meaningful

Course/Programme Team Level

44% of colleges identified option D as being most useful and meaningful
 22% of colleges identified option D with either C or A as being most meaningful
 11% of colleges identified option C as being most useful and meaningful
 11% of colleges identified option A as being most useful and meaningful

- prefer D with all appropriate codes including
- option E and C coding against each unit
- department/course team levels would prefer mean and quartile data

Section Head/Course Team Managers Responses

Corporate level

44% of colleges identified option A as being most useful and meaningful

22% of colleges identified option C as being most useful and meaningful
 11% of colleges identified all classifications as of equal importance

Department level

22% of colleges identified option A as being most useful and meaningful
 11% of colleges identified option B as being most useful and meaningful
 33% of colleges identified option C as being most useful and meaningful
 33% of colleges identified option D as being most useful and meaningful

Course/Programme Team Level

56% of colleges identified option D as being most useful and meaningful
 22% of colleges identified option C as being most useful and meaningful
 11% of colleges identified option E as being most useful and meaningful
 11% of colleges identified option A as being most useful and meaningful

Q7 A definition of the 'SARU' is

Number of student units achieved
Number of student units undertaken by enrolled students

(a) Here are two definitions (A and B) of 'Number of student units achieved'

A '...where a student completes all learning outcomes...'

B '...where a student completes at least one learning outcome...'

Curriculum/Quality Managers Responses

Which definition of 'Number of student units achieved'...

	<u>A</u>	<u>B</u>	<u>A and B</u>
Is used by you	89%	11%	
Is used by most academic staff	89%		11%
Is used by the MIS system	89%		11%
Is used by SQA	78%		22%
Is used by SOEID	78%		22%

Section Head/Course Team Managers Responses

Which definition of 'Number of student units achieved'...

	<u>A</u>	<u>B</u>	<u>Other</u>
Is used by you	89%		11% used A and B
Is used by most academic staff	89%		11% used A and B
Is used by the MIS system	78%		11% used A and B, 11% not known
Is used by SQA	67%		33% not known
Is used by SOEID	67%		33% not known

MIS Officer Responses

Which definition of 'Number of student units achieved'...

	<u>A</u>	<u>B</u>	<u>A and B</u>
Is used by you	87.5%		12.5%
Is used by most academic staff	87.5%		12.5%
Is used by the MIS system	87.5%		12.5%
Is used by SQA	n/a		n/a
Is used by SOEID	87.5%		12.5%

(b) Here are two definitions (C and D) of 'enrolled student'

C is the number of students enrolled on the programme or unit who physically attend at least once after the date on which 25% of the programme's (or unit's) duration in days has elapsed

D enrolled students should be identified as those students embarking upon SQA units and whose enrolments (RET5) data are sent by the college to SQA (regardless of length of attendance)

Which definition of 'enrolled student'

Curriculum/Quality Managers Responses

	<u>C</u>	<u>D</u>	<u>OTHER</u>
Is used by you	33%	67%	
Is used by most academic staff	33%	56%	11% use completed students as denominator
Is used by the MIS system	33%	67%	
Is used by SQA	33%	22%	11% use C and D
Is used by SOEID	44%	56%	11% use C and D

Section Head/Course Team Managers Responses

	<u>C</u>	<u>D</u>	<u>OTHER</u>
Is used by you	44%	44%	11% used both C and D
Is used by most academic staff	33%	33%	22% not known: 11% both
Is used by the MIS system	33%	33%	22% not known: 11% both
Is used by SQA	22%	56%	22% not known
Is used by SOEID	22%	56%	22% not known

MIS Officer Responses

	<u>C</u>	<u>D</u>	<u>OTHER</u>
Is used by you	100%		
Is used by most academic staff	12.5%	75%	12.5% n/a
Is used by the MIS system	100%		
Is used by SQA	n/a	n/a	
Is used by SOEID	100%		

- Q8** What percentage of students are 'withdrawn' from NC modules in the college?
(approximation only required here - the term 'withdrawn' reflects those who are recorded as withdrawn in the data sent to SQA)

Curriculum/Quality Managers Responses

22% of colleges identified a withdrawal rate of less than 10%
22% of colleges identified a withdrawal rate of between 10 and 20%
22% of colleges identified a withdrawal rate of between 21 and 25%
33% of colleges could not identify the percentage of students withdrawn

Section Head/Course Team Managers Responses

33% of colleges identified a withdrawal rate of between 10 and 20%
67% of colleges could not identify the percentage of students withdrawn

MIS Officer Responses

22% of colleges identified a withdrawal rate of less than 10%
44% of colleges identified a withdrawal rate of between 10 and 20%
22% of colleges could not identify the percentage of students withdrawn

Q9 What are the main reasons why a student may be withdrawn?

Curriculum/Quality Managers Responses

- students failing to achieve at least one learning outcome
- candidates entered for programmes (block enrolment) and candidate portfolio amended to meet individual requirements (5%)
- students not attending or leaving programme (various reasons)
- open learning students who require additional study time are withdrawn and re-entered
- clerical error
- transferred to a more appropriate course or programme

Section Head/Course Team Managers Responses

- students personal circumstances
- leaves programme
- failing to achieve - 3.5%
- enrolled programme not suitable
- block enrolment procedures enacted and students choose alternatives at a later date
- enrolled in error/administration error <5%
- poor attendance - approximately 10%
- student gains employment

MIS Officer Responses

- block enrolment, candidate profile change
- errors
- students leaving programmes - approximately 50% of all withdrawals
- failure to achieve - 20% of withdrawals
- not completed unit by September each year
- mistakes in 'booking' process - result of push to meet 40 day deadline

Q10 (a) Typically in what circumstances would you decide not to enter a candidate who registered an interest or attended the module/unit?

Curriculum/Quality Managers Responses

- all candidates are enrolled automatically

- by exception, entered once college is convinced of student commitment to the course
- student leaving the programme before they could achieve a recognisable component of the module unit
- failure to pay fees
- very rare
- students 'sampling' modules/courses
- when multi-level teaching takes place i.e. text processing, candidates only entered onto appropriate module/unit when their level of skills/ability have been ascertained
- anyone demonstrating immediate attendance problems

Section Head/Course Team Managers Responses

- no circumstances
- not common practice
- all students are registered as soon as they enrol
- students not entered until 2nd/3rd week
- registration delayed until level of module decided e.g. Word Processing
- demonstrating attendance difficulties - registration on hold pending review

MIS Officer Responses

- all students enrolled at registration
 - informed by team leader not to enrol
 - unlikely, all students registered regardless of progress
 - delay registration until attendance pattern confirmed - approximately 6 weeks
 - not my decision, but do not book early withdrawals from programme
- (b) Does this decision not to enter happen with particular groups - for example prison education, flexible learning, evening, SVQs, evening provision, community based programmes, (and the principal reasons)**

Reasons

Curriculum/Quality Managers Responses

- SVQs - delay entering students until convinced students will attend or are capable of achieving
- all students are entered immediately
- work based SVQs - awaiting employee decision to enter programme

- not known
- problems of clarity where there was more than one academic year
- flexible learning - students given choice to participate in certificate process after completing non-certificated programme (30 hours)
- anyone demonstrating immediate attendance problems
- Special Training Needs (STN) students

Section Head/Course Team Managers Responses

- does not happen
- SVQ candidates entered on completion as retention of these programmes proves to be a concern
- SVQ candidates are not enrolled until students complete work placement
- all students are registered when they apply
- bi-level teaching; registered once appropriate level has been identified
- flexible learning candidates follow a non-vocational course with the option of entering candidates for assessment at a later date

MIS Officer Responses

- STN students; entered onto non-modular provision and depending on progress, entered onto modules
- SVQs; roll on/off provision reviewed monthly and students entered depending on progress
- SVQs - can be undertaken on non-certificated work which can lead to certification at request of employer
- not applicable
- flexible learning - candidates entered depending on achievement

Q11 At what point do you enter a candidate on a RET5 for an SQA award?

Curriculum/Quality Managers Responses

- automatically at registration
- immediately
- within 2-3 weeks of students starting programme
- flexible learning students entered when they submit their first assessment
- all full-time students entered for modules at enrolment/registration process at beginning of academic year (block enrolment)

Section Head/Course Team Managers Responses

- immediately
- entered automatically through block enrolment system
- within 3-4 weeks

MIS Officer Responses

- immediately on starting module/unit
- within 5 weeks of start-up
- at registration - all students enrolled for modules within programme of study

Q12 At what point is the RET5 information forwarded to the SQA?

Curriculum/Quality Managers Responses

- 4 weeks after student enrolled
- within 40 days when possible

Section Head/Course Team Managers Responses

- not known, college decision
- 10 weeks after enrolment

MIS Officer Responses

- first submission within five weeks of start-up, subsequently every six weeks to allow for RET4 errors/amendments to be processed
- four weeks after students enrol (achieved for 33% of students, 70% forwarded within five weeks)
- within 40 days if possible - difficult to achieve at start of academic year
- attempt to forward within 40 days
- by 11th week at start of session, and every three weeks after initial journal entry
- follow SQA guidelines
- technical difficulties results in information forwarded between 40 to 80 days
- outwith SQA requirements of 40 days

Q13 What percentage of students would you estimate are withdrawn between recording them on a RET5 (internal college recording) and journal entries to the SQA (sending information externally)?

Curriculum/Quality Managers Responses

- 1-2% students displaying attendance problems
- 2% financial problems
- 0% not known
- 0.05% entered by error
- 5% or less
- not aware of this practice

Section Head/Course Team Managers Responses

- maximum of 5% of all full-time students
- non known - not a departmental responsibility
- 2% of students leave programme early

MIS Officer Responses

- 0.05% for reasons of human error in original entries
- 0%
- 5% - students leave programme early
- <10% students 'drop-out' - minimises costs
- <5% - withdrawal reasons

Q14 In what ways do you feel there could be inaccuracies of recording, different interpretations of student enrolment data or different interpretations of student pass rate data supplied to the SQA?

Curriculum/Quality Managers Responses

- if the college policy was to enrol students at a later point of time e.g. SVQs
- none if correct definitions, processes are used
- colleges need clearer guidance
- inaccuracy in recordings e.g. human error
- college combining registration with enrolment and utilising a 'block' enrolment process
- system cannot be manipulated significantly, once students are entered onto RET5 then SQA data robust

Section Head/Course Team Managers Responses

- students entered on wrong programmes
- technical difficulties in the transfer of data to SQA
- human error in entering data

MIS Officer Responses

- colleges who use block enrolment processes, and students programme subject to change
- if it is a college policy to delay enrolment of students until attendance/achievement established
- possible distortion with 'clear-ups'
- modules extending over two academic years
- not counting extension days
- human errors
- timing - students achieve modules the following academic year e.g. flexible learning/SVQs

Q15 What useful information might allow you to judge the quality of your provision and be helpful in improving quality in

Curriculum/Quality Managers Responses

A SVQs

- SARUs and SPARs calculated on completion dates within a given time period

B Open and distance learning

- Inclusion of open/distance learning codes when SARU data published

C Flexible learning

D NRQs

- Client satisfaction calculated on standard formulae

General Comments

- National guidance required on the calculation of SARUs to ensure standard practice across the sector

Section Head/Course Team Managers Responses

A SVQs

- quality of provision to be judged by external verification
- additional staff development required for verification/moderation process to generate standardisation across the sector

B Open and distance learning

C Flexible learning

D NRQs

General Comments

- national system providing guidelines to be used by all centres

MIS Officer Responses

A SVQs

- better guidance on course design/content

B Open and distance learning

C Flexible learning

D NRQs

General Comments

- not relevant
- data on student enrolment for A, B, and C to observe patterns
- achievement recorded on a monthly basis
- require data on non-SQA awards

Q16 What do you see as the difficulties of providing and assessing data for

Curriculum/Quality Managers Responses

A SVQs

- duration of time which a candidate may take to complete an award - results may need to be accumulated over the life of the award
- entry and exit points out of synchronisation with academic years used to calculate SARU data

B Open and distance learning

- figures can be manipulated dependent on college recording policy i.e. only enrol students once completed first assessment

C Flexible learning

D NRQs

- agree questions, possibly sampling rather than complete question

General Comments

- roll on/roll off programme with different start/finish dates outwith norm

Section Head/Course Team Managers Responses

A SVQs

B Open and distance learning

- problem of re-entering students over academic years

C Flexible learning

D NRQs

General Comments

- roll on/roll off programme with different start/finish dates
outwith norm

ADDITIONAL COLLEGE “SCENARIO” QUESTIONS & ANSWERS

1. Student A attended college for the first eight weeks of a sixteen week night-school programme held every Tuesday evening. Would the student be included in the calculation for SARU Data?
2. Student B attended college for the first four weeks of a twenty week day release programme held on a Wednesday. Would this student be included in your calculations of SARU data?
3. Twenty students commenced studying the module Word Processing 1 at the local outreach centre. This programme was timetabled to be delivered over 13 sessions. Two students turned up for the first two weeks and were never seen again. A further three students left the programme after the 6th session. The remaining fifteen students achieved the module. What would the SARU be for this group?
4. Within a group of 16 students undertaking the module Core Maths 2 by the third week of the programme student C and student D appear to be unlikely to achieve this module (for reasons of attitude and ability). How many students would you enter on a RET5 (registration document) for the purposes of enrolment with SQA?
5. Student E started your 20 week Introduction to Computers Module at the beginning of the second week. He attended for another two weeks never to be seen again. Would you remove him from the registration document?

“SCENARIO” QUESTION RESPONSES

		Curriculum/ Quality Manager	Section/ Team Leader	MIS Officer
Question 1	included in calculation	100%	100%	100%
	not included in calculation			
Question 2	included in calculation	62.5%	100%	12.5%
	not included in calculation	25%		
	other	12.5% - only included if student entered on RET5		87.5% - depending on RET5 data being sent to SQA
Question 3	75% (15/20)	37.5%	57%	62.5%
	83% (15/18)	62.5%	43%	37.5% only if RET5 data sent to SQA
Question 4	entered all students	75%	71%	50%
	entered 14 students	25%	29%	25%
	other			25% - entered unless informed otherwise by lecturing staff
Question 5	student remains on register	62.5%	43%	62.5%
	student removed from register	37.5%	57%	12.5%
	Other			25% - removed if informed at an early date

PIs IN FE STARTER SET

This publication sets out definitions for performance indicators on:

- Student Programme Achievement Ratio (SPAR)
- Student Achievement Ratio by Unit of Learning (SARU)
- Student Retention Ratio 1 (SRR1)
- Student Retention Ratio 2 (SRR2)
- Post Course Success Ratio (PCSR)

The definitions for the above performance indicators have already been published in SOEID Circulars (FE) 14//95 and (FE) 10/96. This publication has summarised and presented the pertinent information provided in the SOEID Circulars. Explanatory information regarding performance indicator definitions has also been included. The definitions have been amended to take into account the introduction of the Higher Still provision, and subsequent changes in the terminology used by the SQA.

In addition, the publication provides exemplars demonstrating how performance indicators are calculated. The examples given are representative of data available for college personnel to produce performance indicators to support internal analysis of the provision.

Performance Indicators in Further Education

Student Programme Achievement Ratio (SPAR)		
Definition	$\frac{\text{Number of students attaining the required criteria for success in the programme}}{\text{Number of students satisfying the attendance criteria}}$	FE (14/95) Para. 10 (AMENDED)
SPAR Numerator		
i) Units	<i>A generic term to infer 'units of learning', 'modules', 'units' or 'workbased units'.</i>	FE (14/95) Para. 11
ii) Criteria for Programme Success	<i>Where definitions of programme success already exist through agreements with industry or have been derived from within the SQA approval and validation framework associated with an award (SGA, HNC/D, SVQ, GSVQ, Professional Qualifications), or through generated access agreements, these definitions should be used.</i>	FE (14/95) Para. 13 (AMENDED)
iii) Locally Devised Programmes	<p><i>Where a named Group Award is not available (or the student is not entered for the award), SPAR success should be defined as achievement of an identified group of 16 credits at the same level. Colleges are responsible for (and held accountable) for defining success in locally devised programme (using the definition consistently) and, importantly, ensuring that students seeking places on these programme are aware of the criteria for successful completion.</i></p> <p><i>College definitions of programme success will be open to external audit and inspection.</i></p>	FE (4/95) Para. 3.7 (AMENDED) FE (10/96) Para. 7 (AMENDED) FE (10/96) Para. 8
iv) Students Not Following Recognisable Programmes	<i>Where students do not follow recognised programmes, but elect to study adhoc selections of subjects, modules, or units, the use of SPAR is considered inappropriate.</i>	FE (14/95) Para. 15
SPAR Denominator		

<p>i) Number of Students</p>	<p><i>The 25% attendance criterion is to be used when determining the number of students to be entered in the denominator for SPAR calculation ... recognised the advantages achieved in terms of robustness and consistency of data, undertaking programmes to that used for funding returns.</i></p> <p><i>For programmes where classroom attendance is planned (and recorded), it is the number of students entered on the programme, or entered for the first course, or unit of a course within the programme, who physically attend at least once after the date on which 25% of the programme's duration in days has lapsed.</i></p>	<p>FE (14/95) Para. 10</p> <p>FE (14/95) Annex A (AMENDED)</p>
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ii) Programmes Where Attendance is Not Planned (e.g. Open/Distance Learning)	<i>The number of enrolled students when calculating SPARs should be determined using the fee paid or waived rule as used for SUM/FES returns - see FE (9/96), Annex 2, Section 7.</i>	FE (10/96) Para. 6
Calculation of SPARs for Programmes Extending Beyond One Year in Duration	<p><i>When programmes extend over more than one academic session, a definition of success should be agreed for each year. SPAR figures for these courses as a whole, as well as the SPARs for each year of the course, should be compiled.</i></p> <p><i>Colleges should base their calculations on individual course year SPARs (i.e. HND1, HND2 etc.)</i></p> <p><i>In such cases the success criteria for intermediate years should be that which allows access to the next year of the course.</i></p>	<p>FE (4/95)</p> <p>FE (10/96) Para. 4</p>
Calculation of SPARs for Full-time and Part-time Programmes	<i>Colleges are asked to differentiate between SPARs for full-time and part-time programmes when collecting, analysing and publishing SPAR data.</i>	FE (10/96) Para. 5

Student Achievement Ratio by Unit of Learning (SARU)		
Definition	SARU is defined as follows: $\frac{\text{Number of student units achieved}}{\text{Number of student units undertaken by enrolled students}}$	FE (14/95) Para. 16
SARU Numerator		
i) Units	<i>A generic term to infer 'unit of learning', 'module', 'unit', or 'work-based unit' (including units from SQA and other awarding/examining bodies).</i>	FE (14/95) Para. 16
ii) Student Units Achieved	<i>Success is the attainment by the student of the minimum assessment requirements specified for success in the relevant unit.</i>	FE (14/95) Para. 19
SARU Denominator		
i) Enrolled Students	<i>Enrolled students for SARU calculations should be identified as those students embarking upon SQA units and who have been entered for the unit with the SQA. The same approach, in principle, should be used where other awarding/examining bodies are involved.</i> <i>N.B. Revised method introduced as original definition of 'enrolled students' i.e. the application of the 25% attendance rate at unit level (as recommended in FE (14/95) was not justified in terms of the additional data processing.</i>	FE (10/96) Para. 12 (AMENDED)

Student Retention Ratio 1 (SRR1)		
Definition	<p>SRR1 is defined as follows:</p> $\frac{\text{Number of students satisfying the attendance criteria}}{\text{Number of students initially registered for the programme}} \times 100\%$ <p>To be used in conjunction with the SPAR indicator</p>	FE (14/95) Para. 23
Attendance Criterion	<p>Students who satisfy the attendance criteria for inclusion in the SUM funding returns.</p> <p>The 25% attendance criterion should be used to determine the number of students to be entered for SRR1 calculations.</p>	FE (14/95) Para. 23 FE (14/95) Annex A
Initially Registered	<p>The number of students who complete the college registration procedure for programmes or registered for the first course or unit of a course within the programme.</p>	FE (14/95) Para. 23 (AMENDED)

Student Retention Ratio 2 (SRR2)		
Definition	<p>SRR2 is defined as follows:</p> $\frac{\text{Number of students completing the programme}}{\text{Number of students initially registered for the programme}} \times 100\%$ <p>To be used in conjunction with the SPAR indicator</p>	FE (14/95) Para. 23
Completing Students	A student who 'completes' a programme should be considered as one who has completed (not withdrawn from) the minimum number of units specified in the college's definition of success for the programme.	FE (14/95) Para. 24
Initially Registered	The number of students who complete the college registration procedure for programmes or registered for the first course or unit of a course within the programme.	FE (14/95) Para 23 (AMENDED)

Post Course Success Ratio (PCSR)												
Definition	<p>PCSR is defined as follows:</p> <p style="text-align: center;"> <u>Number of successful students who gain employment or progress to more advanced education or training</u> Number of successful students responding </p> <p>To be used in conjunction with the following table:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Category</th> <th>Proportion of Successful students</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">A</td> <td>In employment</td> </tr> <tr> <td style="text-align: center;">B</td> <td>Progressing to more advanced study or training</td> </tr> <tr> <td style="text-align: center;">C</td> <td>Of other known destination</td> </tr> <tr> <td style="text-align: center;">D</td> <td>Of unknown destination</td> </tr> </tbody> </table>	Category	Proportion of Successful students	A	In employment	B	Progressing to more advanced study or training	C	Of other known destination	D	Of unknown destination	FE (14/95) Para. 19
Category	Proportion of Successful students											
A	In employment											
B	Progressing to more advanced study or training											
C	Of other known destination											
D	Of unknown destination											
Numerator	The numerator should be A + B in the table above i.e. the number of successful students in employment plus the number of successful students progressing to more advanced study or training.	FE (14/95) Para. 20										
Denominator	The denominator should be successful students whose destination is known, A + B + C in the table above i.e. successful students in employment, plus those progressing to more advanced study or training plus those of other known destinations.											
Data Collection	<p>It is recommended that:</p> <ul style="list-style-type: none"> • data collection methods should be auditable (hence tutor knowledge alone is not appropriate) • colleges should adopt the data collection method most suitable for their circumstances and should consider using combined methods (e.g. postal and telephone survey) where appropriate • colleges should regularly review the effectiveness of their data collection procedures • for courses running for the traditional academic year, information collected should reflect the position of the student as at 31 December in the academic year of qualifying, for firm arrangements • for courses finishing at times of the year other than the traditional July finishing date, information should be collected 6 months after the end of the course for firm arrangements made to start 9 months after the end of the course. 	FE (14/95) Para. 31										

<p>Non Provision</p>	<p>Full-time</p> <p>Colleges should determine PCSRs for all full-time programmes. Full-time programmes should be defined in the same way as for SUM/FES returns - see FE (9/96), Annex 2, Section 5.</p> <p>It will be for colleges to decide whether there is value in tracking PCSR for certain non full-time programmes (e.g. courses for unemployed adults). It is unlikely that PCSR information would be appropriate for students who are undertaking studies while in employment.</p>	<p>FE 10/96 Para. 9</p>
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PIs/KEY QUALITATIVE QUESTIONS FOR COLLEGE ICT SERVICES

The aim of this report is to provide guidelines for evaluating the performance of college ICT services in meeting the needs of the user groups, i.e. college academic and support staff. In aiming to provide appropriate performance indicators in line with the activities to be evaluated, it has been necessary to develop a mixed model where performance indicator ratios have been developed where appropriate and practical, but where key questions and schedule tables have been used where these seem more in line with the evaluated activities.

The contents of the report are not intended to constitute compulsory performance indicators or compulsory key performance questions. Rather, they are provided as guidance on the kind of questions or statistical data which could be used to support the evaluation process.

Users may wish to alter terms or questions in the light of local practices and terminology, and local situations may determine emphasis on certain elements rather than others. The key questions posed are intended to support *qualitative evaluation*, while performance indicators are an attempt to generate *quantitative evaluation* through the production statistical data. The questionnaires provided are intended to suggest possible lines of enquiry in line with the key elements and may be developed in electronic format or distributed as paper versions.

Contents

- 1. Key Services**
- 2. Seven Elements of ICT Provision**
- 3. Existing Standards for Comparison**
- 4. General Framework for Evaluation**
- 5. Strategy Element**
- 6. Staffing Element**
- 7. Infrastructure Element**
- 8. System Administration Element**
- 9. User Support Element**
- 10. Task Management Element**
- 11. Quality Assurance and Improvement Element**
- 12. Sample Questionnaires**
- 13. Performance Indicators' Overview**

1 Key Services

In any attempt to evaluate ICT services within a college, it is essential to establish a clear view of what services are being provided within the college and who the different users of these services are. This in turn will lead to different user requirements and expectations.

The following lists attempt to provide a typical outline of services and users within a college, but these may need to be amended in light of local situations.

Typical Services

- Electronic e-mail delivery
- Print services
- Network availability
- Network server availability
- Inter site communication
- Internet link availability
- Hardware Installation and maintenance
- Software Installation and maintenance
- User problem tracking/solutions
- Access provision to data storage/retrieval
- Workstation availability and maintenance
- New user registration

Typical users

- Academic Staff
- Support Staff
- Students

2 *Seven Elements of ICT Provision*

The following elements have been developed by the project working group to evaluate identified key operational strands in a typical college ICT services provision. Performance indicators and other evaluative tools have been identified to support the evaluation of these elements:

1. Strategy
2. Staffing
3. ICT Infrastructure
4. System Administration
5. User Support
6. Task Management
7. Quality Assurance Arrangements

3 *Existing Standards for Comparison*

The following examples are available online for comparison with the performance indicators used in this report. Two are taken from UK higher

education institutions and one looks at ICT services from the perspective of what the company calls the 'non-profit organisation' model.

SOCITM (Society for Information Technology Management)

The primary objective of the Society is to promote the effective and efficient use of Information Technology in Local Government and the Public Sector. A set of thirteen key performance indicators (KPIs) is provided for the ICT function in local government and the public sector. The indicators were selected by the SOCITM Best Value Steering Group (fellow directors and heads of ICT) as a first step towards measuring, comparing and improving the performance of the ICT function. They are intended to support the England and Wales local government statutory best value indicator BVPI 157 for ICT services. There is an interactive online form available at their site.

Website: www.socitm.gov.uk

ICT Performance Indicators, Brunel University, London

This section of the university site presents the work of the Information Services Subcommittee of the university's computing services department in defining the parameters of expected levels of service, and measuring relevant achievement criteria against agreed target percentages. A full list of performance indicators is provided on the site, along with explanations and agreed targets. Performance achievement statistics are also available online in .pdf format.

Website: www.brunel.ac.uk/depts/cc/service/sd/pi/

ASM (Advanced Strategic Management Consultants)

ASM is a private consultancy firm based in Canada whose aims are to help organisations and communities develop strategies to achieve optimum benefits from new technology for users of information and information providers. The content of this section of their site is a digest of one of the workshops they offer on evaluating the impact of technology on an organisation. It lists a number of key qualitative questions and indicators on ICT provision.

Website: <http://asm-consultants.com/successfulorganisation.htm>

4 General Framework for Evaluation

- Identify strengths/areas for development of ICT support services in light of user needs and organisational goals.
- Provide trend data to assess changes in ICT services over time.

- Assess ICT developments/justify expenditure in light of benefits and results.
- Monitor ICT activities/services to detect change of use/quality of service.
- Determine degree of satisfaction of users.
- Identify best practice performance as benchmark.
- Measure input (resources/finances/materials/personnel/facilities required) to produce desired outcomes.
- Measure output (volume and quality of services provided).
- Identify what outcomes have been achieved in line with college objectives.

5 Strategy Element

Within the strategy element, the following quality indicators have been identified, and for each quality indicator, a number of performance indicators have been suggested.

Quality Indicator 1:

Strategy is developed giving clear direction to ICT support services.

Qualitative Questions:

- Is an annual strategic plan available?
- How do the objectives within the ICT strategic plan support the targets set in the overall college development plan?
- Has the strategic plan been reviewed annually to identify areas of strength or areas requiring development in respect of supporting the achievement of the stated targets?

Suggested Performance Indicator:

$\frac{\text{Number of targets achieved}}{\text{Number of stated targets in strategic plan}} = \text{Target Achievement Ratio}$

Quality Indicator 2:

Strategic and operational plans for the service are fully communicated.

Qualitative Questions:

- How many staff meetings took place at which the strategic and operational plans were discussed and explained?

- How many e-mails/memos were circulated in which the strategic and operational plans were communicated?
- How many requests were received for re-clarification of the strategic and operational plans?

Suggested Statistical Table:

Number of staff meetings	Number of e-mails/memos	Requests for re-clarification

Quality Indicator 3:

Strategic and operational plans are systematically monitored and reviewed against targets.

Qualitative Questions:

- How many meetings have taken place within the last 12 months where review of the operational performance has been an agenda item?
- What objectives and targets resulted from the review of operational performance?
- How were the objectives and targets integrated into your planning cycle?
- What actual changes to the strategic and operational plans were implemented as a result of reviewing objectives and targets?

Suggested Statistical Table:

Strategy Objective	Date of review of objectives	Date of review of objectives	Date of review of objectives

Performance Indicator:

$\frac{\text{Actual number of reviews}}{\text{Number of planned reviews}} = \text{Review Achievement Ratio}$
--

Quality Indicator 4:

Plans are informed by sound analysis of technological developments.

Qualitative Questions:

- How many briefing papers/ reports have been analysed within the last 12 months?
- How have strategic plans been developed/amended in light of technological development?

6 Staffing Element

Within the staffing strand, the following quality indicators have been identified, and for each quality indicator, a number of performance indicators have been suggested.

Quality Indicator 1:

Staff delivers the service mission effectively and efficiently.

Qualitative Questions:

- Has the user questionnaire been reviewed to assess user perceptions of the effectiveness and efficiency of ICT services?
- What steps have been taken to improve the effectiveness and efficiency of ICT services in the light of user comments/questionnaire results?

Performance Indicators:

$\frac{\text{Number of ICT support staff}}{\text{Number of college staff}} = \text{Ratio of ICT support staff to college staff}$
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$\frac{\text{Number of ICT support staff}}{\text{Number of computer terminals}} = \text{Ratio of ICT support staff to computer terminals}$
--

$\frac{\text{Number of call outs effectively dealt with in agreed timescale}}{\text{Number of call out requests}} = \text{Staff Response/Efficiency Ratio}$

$\frac{\text{Number of tasks completed successfully by ICT staff on daily/weekly basis}}{\text{Number of incomplete tasks on daily/weekly basis}} = \text{Effectiveness Ratio}$

Quality Indicator 2:

Staff skill base reflects the technological requirements of the service.

Qualitative Questions:

- Has a skills audit been undertaken to identify the technological skills required for the effective delivery of the ICT services?
- Has a skills audit been undertaken to identify the technological skills base of the current members of staff?
- What actions have been taken to deal with the areas where staff skills levels require further development to meet the technological requirements of the service?

Suggested Statistical Table:

Identified Skills required for effective delivery	Qualifications level of staff	Number of staff with required skills
eg. Programming		

NB. Individual college ICT services departments should identify their technological skills requirements and complete the appropriate columns in the above table.

Quality Indicator 3:

Staff development is planned and leads to improvements in service provided.

Qualitative Questions:

- Has each member of staff undergone a career review interview within the last year?
- Has the career review process led to the identification of staff development needs which will lead to improved delivery of the ICT services?
- Has planning been put in place to address the development needs of staff and has the planned training taken place?
- In what ways has the ICT service been improved as a result of specific staff training activities?

Quality Indicator 4:

Effective use is made of external expertise.

Qualitative Questions:

- How has the use of external expertise been monitored to evaluate the effectiveness of the external experts?
- Has a log been maintained to identify the tasks which required external expertise, and has this log been used to inform the discussion of staff development needs?

Performance indicator:

$\frac{\text{Number of requests requiring external expertise}}{\text{Number of technical support requests}} = \text{External expertise Ratio}$
--

7 Infrastructure Element

Within the infrastructure element, the following quality indicators have been identified, and for each quality indicator, a number of performance indicators have been suggested.

Quality Indicator 1:

The college network is robust, reliable with good response times from all stations.

Qualitative Questions:

- Are several servers used to support particular functions?
- Will the failure of one of these servers result in any loss of user service,
- Will other servers supporting these functions provide the resilience within the system to maintain user service?
- Has the strategic plan been reviewed annually to identify areas of strength or areas requiring development in respect of supporting the achievement of the stated targets?

Performance Indicators:

Tables could be used to report availability of various servers and networks e.g.

Are there sub-networks on which reports may be made? Raw sub-network availability is _ %?

Date	Sub-net	Description (if applicable)	Total loss	Core loss

Server achievement percentages are measured on overall availability.

	Total	Incidents	Avail hours	Lost (all)	Lost (core)	Achieved
Teach/Learn						
Admin						
Mail						
WWW						
Other						
Total						

Incident details could be presented in the following tables. Unplanned outages not attributable to outside agencies totaled. Hours overall (including core hours) over a 12-week period?

Date	Server Type	Plan	Description	Total loss	Core loss
September total					

Service incidents pertaining to internal links (e.g. between campuses) and accessibility of facilities (e.g. work areas) could be reported as follows:

Date	Item	Description	Total Loss	Core Loss

Service incidents pertaining to external links, including links to secondary connections.

Date	Item	Description	Total Loss	Core Loss

e.g. The total downtime for the link to JANET was? Hours out of a total of $365 \times 12 = 4,380$ hours, giving a performance achievement of _ %.

Quality Indicator 2:

College users gain good access to network and information resources.

Qualitative Questions:

- Is access available to the network and information resources in all college buildings or campuses?
- Is access available to the above for all students?
- Is access available to the above for all staff?
- How often can users gain access, are they allocated sufficient work storage?

- Are rooms fully utilised.

Performance Indicators:

$\frac{\text{Number of network computers}}{\text{Number of FTE students}} = \text{Ratio of network computers to students}$
--

$\frac{\text{Number of network computers}}{\text{Number of fulltime staff}} = \text{Ratio of network computers to staff}$

$\frac{\text{Number of Students with access to e-mail}}{\text{Total No of students}} = \text{Ratio of e-mail services to students}$

$\frac{\text{Number of Staff with access to e-mail}}{\text{Total No of staff}} = \text{Ratio of e-mail services to staff}$
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Quality Indicator 3:

Users have ready access to required applications software.

Qualitative Questions:

- Are policies in place to determine the requirements and purchase of general or specialist software and how effective are they?
- What policies are in place to determine which users access the required applications software and how effective are they?
- What written procedures exist to determine the numbers of software licences required and the appropriate life cycle of software?

Suggested Performance Indicator:

$\frac{\text{Number of software licences}}{\text{Number of Users}} = \text{Ratio of software to users}$

Quality Indicator 4:

Transparent processes of procurement are employed and value for money is secured.

Qualitative Questions:

- What policies are in place to determine the specification of equipment in conjunction with users and suppliers and how effective are they?
- What policies are in place to obtain value for money and reduce the cost of ownership and how effective are they?
- What policies are in place to contract for the installation of equipment or third parties for maintenance services if equipment is deemed critical (eg. servers and key network components) and how effective are they?
- What policies are in place to contract for the commissioning of equipment by installation of software or integrating it into the college Network and how effective are they?

Suggested Performance Indicators:

The following Key Performance Indicators have been developed by SOCITM

Website: www.socitm.gov.uk

- KPI No 4 – Acquisition cost of workstation spreadsheet
- KPI No 5 – Cost of connection to voice network
- KPI No 6 – Cost of connection to data network
- KPI No 7 – Support costs per workstation

Quality Indicator 5:

A rolling programme of system upgrade and equipment replacement ensures quality of provision is maintained/improved.

Qualitative Questions:

- What policies are in place to identify annual expenditure and implement a programme of equipment replacement, and how effective are they?
- What process is used for users to make recommendations to the college Executive on expenditure and replacement?
- What process is used for users to make recommendations to the college Strategic and Operational plans?
- What process is used for users to make recommendations to the college ICT Policy Group?

8 System Administration Element

Quality Indicator 1:

College network is secure.

Qualitative Questions:

- What policies are in place to determine required security levels?
- What security procedures are in place and how successful are they?
- What virus protection software is in use and how effective is it?
- Which areas of the college infrastructure are password protected, and what policy exists regarding access rights?
- What software is in place for restricted site access, and how effective is it?
- What were the repercussions of any security breaches that took place over the past year, and how could the impact of such breaches be minimised?

Performance Indicators:

$\frac{\text{Number of successful security breaches}}{\text{Number of security alerts}} = \text{Ratio of security breaches}$
--

Quality Indicator 2:

Files servers are logically structured and good housekeeping practices are employed to ensure efficient operation.

Qualitative Questions:

- What housekeeping practices are employed, and how effective are these practices in ensuring the smooth operation of files servers?
- What written procedures exist to cover housekeeping practices, and how effective are these practices in ensuring the smooth operation of files servers?
- What backup procedures are in place, and how effective are these practices in ensuring the smooth operation of files servers?
- What checks have been made on the files servers in terms of their logical structure?
- Have the user questionnaire responses been used to support the development of a more logical and 'user friendly' file structure?

Quality Indicator 3:

Application software resides in a secure environment.

Qualitative Questions:

- What security procedures are in place regarding access to application software and how effective are they.

- What policies exist for determining which users have access to various software locations?
- Which software applications are password protected, and what criteria are used to determine the need for password protection?

Performance Indicator:

$\frac{\text{Number of password protected areas}}{\text{Number of software applications}}$	= Password Protection Ratio
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Quality Indicator 4:

Network performance is analysed and improvements introduced.

Performance Indicators:

*Use of network management tools.

Quality Indicator 5:

Full documentation is maintained on ICT infrastructure and services.

Qualitative Questions:

- What arrangements are in place for the storage of and access to written documentation on ICT infrastructure and applications software?
- Is written documentation on ICT infrastructure and applications software updated on a regular basis?

Quality Indicator 6:

All legal requirements relating to ICT operation are met.

Qualitative Questions:

- Are procedures in place to cross check compliance within the areas of data protection,
- copyright, confidentiality, and licensing agreements and practices?
- How effective are these procedures in identifying compliance issues?

Suggested table:

Software package	Data protection issues	Copyright issues	Confidentiality issues	Licensing agreements and practices

Quality Indicator 7:

Disaster recovery and continuity plans are clear and known by all staff.

Qualitative Questions:

- How familiar are staff with the disaster recovery and continuity plans?
- Have the disaster recovery and continuity plans been discussed and tested?
- In what ways have the disaster recovery and continuity plans been modified in the light of test disaster scenarios or actual disaster scenarios?

9 User Support Element

Within the user support strand, the following quality indicators have been identified, and for each quality indicator, a number of performance indicators have been suggested. In addition to these, a user questionnaire has been developed which would inform the analysis of user support.

Quality Indicator 1:

User demands are dealt with in a courteous, timely and positive manner.

Performance indicators:

Has the user questionnaire been analysed and appropriate action taken?

$\frac{\text{Number of users invited to respond}}{\text{Number of users who responded}} = \text{Questionnaire Response Ratio}$
--

$\frac{\text{Average questionnaire score per user}}{\text{Number of users who responded}} = \text{Average Questionnaire Score}$

$\frac{\text{Responses within agreed timescale}}{\text{Requests logged with help desk}} = \text{Help Desk Response Ratio}$
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Suggested statistical table:

<u>Time help request logged</u>	<u>Time help request dealt with</u>	<u>Response time delay</u>

Quality Indicator 2:

Full and appropriate use of services is promoted amongst users.

Qualitative Questions:

- How do ICT services promote the use of the range of services provided, and how effective has this been in increasing appropriate usage?
- What support materials/instructions have been provided to encourage the appropriate use of the range of services available?
- What action has been taken to promote services in the light of user questionnaire responses?

Performance indicators:

$$\frac{\text{Number of actual users}}{\text{Number of registered users}} = \text{Actual User Ratio}$$

$$\frac{\text{Number of frequent users}}{\text{Number of infrequent users}} = \text{Frequent User Ratio}$$

Quality Indicator 3:

College operational plans are used to identify future support needs.

Qualitative Questions:

- Have the college operational plans been scrutinised to identify future support needs?
- Have these future support needs been incorporated into the ICT strategic plans?

Quality Indicator 4:

Reports from staff development and careers review processes are used to plan support activities.

Qualitative Questions:

- Have the staff development plans of college staff been scrutinised to identify the role of ICT services in supporting the development needs of staff?
- Has the role of ICT services in supporting staff development been evaluated?

10 Task Management Element

Quality Indicator 1:

Tasks are prioritised to give maximum benefit from available resources.

Qualitative Questions:

- Are methods of prioritising logical?
- What criteria are used to establish priority?
- Are methods of prioritising objective, logical, and clear to the users?

Performance Indicator:

$\frac{\text{Number of tasks given high priority}}{\text{Number of tasks}} = \text{Priority ratio}$

Quality Indicator 2:

Major tasks are well defined and agreed.

Qualitative Questions:

- Is task management software used in task planning, or, if not, what methods of project planning are used to ensure sound tasks management principles?
- How are major tasks agreed?
- Is there any consistent planning template in use across the various tasks?
- How effective are the task management approaches in defining and clarifying major tasks?

Quality Indicator 3:

Necessary sub-tasks are defined, dependencies identified and resources allocated.

Qualitative Questions:

- What methods of task planning are used to sub-task?
- Do the methods of task planning help to clearly identify milestones and regular reviews?
- Has sub-tasking led to effective allocation of resources?
- Has sub-tasking led to the more effective and efficient completion of the overall task?
- If difficulties arose in the course of sub-task completion, how could the sub-tasks be more clearly defined to achieve more effective task management?

Suggested statistical table:

Task	Sub-task	Resources

Quality Indicator 4:

Close monitoring of progress ensures completion within given timescales and to required standards.

Qualitative Questions:

- What monitoring procedures are in place to ensure compliance with agreed completion timescales and how successful have these procedures been in ensuring progress towards completion?
- What monitoring procedures are in place to ensure compliance with agreed standards and how successful have these procedures been in ensuring progress towards completion?
- What actions have been taken as a result of the monitoring procedures?

Performance Indicators:

$\frac{\text{Number of tasks completed within timescale}}{\text{Number of tasks}} = \text{Timescale completion ratio}$
--

$\frac{\text{Number of tasks completed to agreed standards}}{\text{Number of tasks}} = \text{Standards ratio}$
--

Quality Indicator 5:

Changes are introduced in a controlled manner with agreed revisions to project timescale/deliverables.

Qualitative Questions:

- What controls are in place to manage changes to project timescales/deliverables effectively?
- How and why were revisions to agreed timescales introduced, and to what extent did these revisions enhance task completion?

11 Quality Assurance and Improvement Element

Quality Indicator 1:

ICT staff has a shared commitment to a quality service.

Qualitative Questions:

- What arrangements have been made within the structure of the ICT staff team to encourage co-operation and teamwork?
- How is a customer focus achieved within the team?
- How often are user questionnaires distributed/reviewed to gauge customer satisfaction ratios?
- What responses have been made to the user questionnaire results in order to improve the quality of the ICT service?
- What actions have been taken in response to the ICT staff questionnaire, and how have these changes improved the quality of service?

Quality Indicator 2:

Structures, systems and procedures exist to ensure that ICT services meet college needs.

Qualitative Questions:

- What structures, systems and procedures exist to feed back discussions of ICT issues from the key college committees to the ICT services manager?
- What structures, systems and procedures exist to identify the ways in which ICT services can support the college needs?
- How are the structures, systems and procedures monitored to gauge their effectiveness in ensuring that ICT services meet college needs?

Quality Indicator 3:

The quantitative base of service performance is comprehensive and used to support detailed analysis.

Suggested table:

(Analysis of network performance statistics as produced by appropriate monitoring software.)

College section/team	Service level agreement	Targets

Performance Indicators:

$\frac{\text{Service level agreement targets achieved}}{\text{Service level agreements}} = \text{Service Quality Ratio}$
--

Quality Indicator 4:

Reporting arrangements ensure accountability and engage college community in constructive debate on ICT issues.

Qualitative Questions:

- What structures and systems are in place to communicate ICT issues discussed at ICT services team meetings to the wider college community?
- What structures and systems are in place to stimulate discussion of ICT issues across the wider college community?
- How effective are the structures and systems in fostering the debate of ICT issues across the college community?

Suggested monitoring table

Key ICT issues	Sections/teams /committees where issues discussed	Progress made on resolving the key issue

Quality Indicator 5:

Evaluative feedback is sought, considered and used.

Qualitative Questions:

- Are the methods of distributing feedback questionnaires effective in providing responses from a cross-section of the college community?
- Is feedback sought on a regular basis?
- What structures are in place to facilitate consideration of feedback data?

- What changes to ICT services have taken place as a result of the consideration of feedback data?
- Has further feedback been sought in order to monitor the effect of any implemented changes?

Performance Indicators:

$\frac{\text{Number of feedback questionnaires returned}}{\text{Number of feedback questionnaires distributed}}$	= Feedback returns ratio
--	--------------------------

$\frac{\text{Number of feedback questionnaires where action taken}}{\text{Number of feedback questionnaires returned}}$	= Feedback action ratio
---	-------------------------

Quality Indicator 6:

Plans for improvement in ICT services are appropriate and consistent with the college mission and development plan.

Qualitative Questions:

- How does the ICT operational plan demonstrate consistency with the overall college mission and development plan?
- How will any planned improvements contribute to the support of the overall college mission and development plan?

12 Sample Questionnaires

User questionnaire:

Please rate the following statements on a scale of 1-4.

1. Completely agree
2. Agree
3. Partly agree
4. Disagree

All staff should answer the following questions.

1) The college e-mail system is easy to use.

- 1
- 2
- 3
- 4

2) The college e-mail system easy is reliable to access.

- 1
- 2
- 3
- 4

3) College access to the Internet is straightforward and reliable.

- 1
- 2
- 3
- 4

4) ICT services staff respond to help desk requests in a courteous and positive manner.

- 1
- 2
- 3
- 4

5) ICT services staff respond in a timely manner to help desk requests.

- 1
- 2
- 3
- 4

6) You are fully aware of the range of ICT services available in the college.

- 1
- 2
- 3
- 4

7) You are confident in the appropriate use of the range of ICT services available in the college.

- 1
- 2
- 3
- 4

8) Overall, ICT services provide a quality service to staff.

- 1
- 2
- 3
- 4

9) Overall, ICT services are delivered efficiently to staff.

- 1
- 2
- 3
- 4

10) ICT services staff has the required technical skills to meet your support needs.

- 1
- 2
- 3
- 4

11) ICT staff has a shared commitment to a quality service.

- 1
- 2
- 3
- 4

Support staff should answer the following questions only.

12) Information stored on college databases can be easily accessed.

- 1
- 2
- 3
- 4

13) Storing information on college databases is easy and straightforward.

- 1
- 2
- 3
- 4

14) There is ready access to the software packages you require to effectively perform your duties.

- 1
- 2
- 3
- 4

The following questions should be answered by management staff only.

15) You are encouraged to discuss ICT issues in a variety of college committees.

- 1
- 2
- 3
- 4

16) The strategic and operational plans of the college ICT services provision are fully communicated to staff.

- 1
- 2
- 3
- 4

17) You are aware of the ICT disaster recovery and continuity plans.

- 1
- 2
- 3
- 4

Thank you for taking the time to complete this questionnaire. Please send your answers to the ICT services team.

ICT Staff Quality Assurance Questionnaire:

Please rate the following statements on a scale of 1-4.

- 1. Completely agree**
- 2. Agree**
- 3. Partly agree**
- 4. Disagree**

1) I am clear about my role within the ICT services staff team.

- 1**
- 2**
- 3**
- 4**

2) I feel that my contribution to the ICT team is valued.

- 1**
- 2**
- 3**
- 4**

3) I value the contribution of others in the ICT team.

- 1**
- 2**
- 3**
- 4**

4) A quality culture with customer focus exists within the ICT services team.

- 1**
- 2**
- 3**
- 4**

5) The skills base of the ICT team reflects the technological requirements of the service.

- 1**
- 2**
- 3**
- 4**

6) ICT services staff respond to help desk requests in a courteous and positive manner.

- 1
- 2
- 3
- 4

7) ICT services staff respond in a timely manner to help desk requests.

- 1
- 2
- 3
- 4

8) There is sufficient ICT staff available to cover the requirements of the service.

- 1
- 2
- 3
- 4

9) The strategic and operational plans of the college ICT services provision are fully communicated to college staff.

- 1
- 2
- 3
- 4

10) Overall, ICT services are delivered efficiently to staff.

- 1
- 2
- 3
- 4

11) You are aware of the ICT disaster recovery and continuity plans.

- 1
- 2
- 3
- 4

12) You have a clear understanding of the ICT disaster recovery and continuity plans.

- 1
- 2
- 3
- 4

Thank you for taking the time to complete this questionnaire. Please click on the submit button to send your answers to the ICT services team manager.

13 Performance Indicators Overview

This section provides an overview of the performance indicators available for use within the relevant ICT service element.

Strategy

Number of targets achieved	= Target Achievement Ratio
Number of stated targets in strategic plan	

Actual number of reviews	= Review Achievement Ratio
Number of planned reviews	

Staffing

Number of ICT support staff	= Ratio of ICT support staff to college staff
Number of college staff	

Number of ICT support staff	= Ratio of ICT support staff to computer terminals
Number of computer terminals	

Number of call outs effectively dealt with in agreed timescale	= Staff Response/Efficiency Ratio
Number of call out requests	

Number of tasks completed successfully by ICT staff on daily/weekly basis	= Effectiveness Ratio
Number of incomplete tasks on daily/weekly basis	

$$\frac{\text{Number of requests requiring external expertise}}{\text{Number of technical support requests}} = \text{External expertise Ratio}$$

ICT Infrastructure & System Administration

$$\frac{\text{Number of successful security breaches}}{\text{Number of security alerts}} = \text{Ratio of security breaches}$$

$$\frac{\text{Number of password protected areas}}{\text{Number of software applications}} = \text{Password Protection Ratio}$$

User Support

$$\frac{\text{Number of users invited to respond}}{\text{Number of users who responded}} = \text{Questionnaire Response Ratio}$$

$$\frac{\text{Average questionnaire score per user}}{\text{Number of users who responded}} = \text{Average Questionnaire Score}$$

$$\frac{\text{Responses within agreed timescale}}{\text{Requests logged with help desk}} = \text{Help Desk Response Ratio}$$

$$\frac{\text{Number of actual users}}{\text{Number of registered users}} = \text{Actual User Ratio}$$

$$\frac{\text{Number of frequent users}}{\text{Number of infrequent users}} = \text{Frequent User Ratio}$$

Task Management

$$\frac{\text{Number of tasks given high priority}}{\text{Number of tasks}} = \text{Priority ratio}$$

$$\frac{\text{Number of tasks completed within timescale}}{\text{Number of tasks}} = \text{Timescale completion ratio}$$

$$\frac{\text{Number of tasks completed to agreed standards}}{\text{Number of tasks}} = \text{Standards ratio}$$

Quality Assurance Arrangements

$$\frac{\text{Service level agreement targets achieved}}{\text{Service level agreements}} = \text{Service Quality Ratio}$$

$$\frac{\text{Number of feedback questionnaires returned}}{\text{Number of feedback questionnaires distributed}} = \text{Feedback returns ratio}$$

$$\frac{\text{Number of feedback questionnaires where action taken}}{\text{Number of feedback questionnaires returned}} = \text{Feedback action ratio}$$

Improving Standards in ICT Support



**Scottish Further Education Unit
Argyll Court
Castle Business Park
Stirling**



Wednesday 19 September 2001

Background

A collaborative project by Glenrothes College, Elmwood College, Fife College, Dundee College, Cumbernauld College, Coatbridge College, South Lanarkshire College and SFEU has been funded by SFEFC to focus on the identification and refinement of existing good practice in self-evaluation of effective use of ICT within colleges.

The aim of the project is to develop a self-evaluation toolkit with national standing which promotes consistency across the sector and which supports college managers in systematic evaluation and improvement of ICT services to address the increasing challenges of greater learning opportunity and more effective and efficient college operations.

Aim

The aim of the conference is to:

- share the strategic processes in developing a set of standards for support staff
- launch the ICT Services toolkit
- examine through workshops, the content of the toolkit and the operational issues arising from the integration of ICT within the self-evaluation process
- provide an international perspective to the quality management of ICT services.

Target audience

The event will be of interest and value to ICT Managers, managers within colleges who have a responsibility for quality development, and staff development managers. It will also be useful for technical support staff and managers interested in the quality improvement of support services.

Option to video-conference

You may prefer to use video-conferencing to access training events. Video-conferencing facilities assist colleges in areas where travel may prove difficult. Limited spaces at each event can be allocated for this. Costs for the events will remain the same and preference will be given to colleges in more remote areas.

Programme

Chair (AM): Martin Dunk, Curriculum and Student Services Manager

0930 Registration and coffee

1000 Welcome, introduction and context
John McCann, Project Leader, Glenrothes College

1040 Workshop 1 A, B, C or D

1130 Workshop 2 A, B, E or F

1220 Lunch

1300 Workshop 3 C, D, E or F

1350 The Quality College
Brian Lister, Chair, FE Quality Improvement Forum

1420 Scotland – How good are you?
Dr Gale Woolley, Chair of the School of Nursing, Miami-Dade College

1450 The Way Ahead
John Laird, Director, SFEU

1520 Close

Administrative arrangements

- Workshop organiser:** Manager, SFEU
- Date:** **Wednesday 19 September 2001**
- Venue:** Scottish Further Education Unit
Argyll Court
Castle Business Park
STIRLING
FK9 4TY
- Fee:** This event will be free to participants. Each college will be allocated a maximum of two places.
- Closing date:** Friday 14 September 2001
- Address to which application forms should be returned:** Conference Assistant
Scottish Further Education Unit
Argyll Court
Castle Business Park
STIRLING
FK9 4TY
- Telephone:** 01786 892007
- Fax:** 01786 892048

Where there is a possibility that applications may not reach the Unit on time, please telephone Marion Paterson on 01786 892007 or fax applications on 01786 892048.

In the interest of delegates' health and comfort, SFEU operates a no smoking policy.

APPENDIX H

Review Sheet



Review of: *Improving Standards in ICT Support*

Location: *Scottish Further Education Unit, Argyll Court, Castle Business Park, Stirling*

Officer: *Martin Dunk, Manager, Scottish Further Education Unit*

Speakers: *John McCann, Project Leader, Glenrothes College*
Brian Lister, Chair, FE Quality Improvement Forum
Dr Gale Woolley, Chair of the School of Nursing, Miami-Dade College, USA
Tony Shaw, Director Network and Information Systems Management,
University
of Paisley
John Laird, Director, SFEU

Date: *Wednesday 19 September 2001*

Number of attendees: 54

Number of responses: 28

Feature	Satisfaction (please circle)	Please Comment
Achievement of objectives	1 15 (54%) (high) 2 13 (46%) 3 4 (low)	Useful and a lot of information. Objectives achieved.
Usefulness of content	1 11 (39%) (high) 2 16 (57%) 3 1 (4%) 4 (low)	I would have liked more detail from the colleges involved in the pilot. Paisley University perspective was especially useful!
Presentation and methods	1 13 (46%) (high) 2 13 (46%) 3 2 (7%) 4 (low)	Good. Enjoyed short presentations from different people. Most impressed with quality of video-conferencing facility with Miami-Dade. Excellent in circumstances. HE presentation seemed badly judged in terms of relevance, delivery and timing.

Organisation and domestic arrangements	1	17 (60%)	(high)	Vegetarian well catered for. Thank you. Excellent. Air/heating poor.
	2	9 (32%)		
	3	1 (4%)		
	4	1 (4%)	(low)	

Other comments

- Very interesting day.
- Very good mix of presentations, issues covered. Probably ambitious to expect to reach firm conclusions in one day, but ownership and enthusiasm evident.
- Good balance of blue sky against practical issues.
- An interesting and thought-provoking day with a good coverage of the key issues.
- All a bit too quick.
- HE input not appropriate to audience – too much detail (jargon). An overview with examples of good practice from which FE could learn would have been sufficient.
- Still more questions than answers (clarity between MIS and college ICT networks etc.). Communication of strategic direction(s) seems a key issue. Self-evaluation culture, development another. Staff development a must (with resource(s)). Realistic progress – college specific. Take up of national ICT standards – may have to be optional short term.
- Brian Lister's presentation was particularly honest and open. Much appreciated. Given the difficult environment. Gale Woolley came across excellently and gave me some ideas to take back home...Intranet, PDAs put to good use for staff and students. Tony Shaw left me a bit flat and tended to go on beyond the point being made. John Robertson was very refreshing and held me for every word. Good practical experience from someone at the coalface of ICT issues. Evaluative approach instead of purely number crunching will help. John is on the ball! And using evaluative.
- I enjoyed the event. Well done.
- Very useful and informative.
- Information on the standards would have enhanced opportunity to contribute to the meeting.

APPENDIX I

PLANNING QUESTIONS FOR COLLEGE SUPPORT

Phase 2 ICT Standards Project Discussion Paper 19 September 2001

The SFEFC have allocated funds for Phase 2 of the project. The general intention is to develop and roll out the work already done within the first phase. *The SFEFC will determine how the funds are allocated and the project developed.* However, views expressed by key practitioners from a range of colleges will be helpful in determining the best way forward. With this in mind, we would ask you to consider the following questions and express your view on elements of the work to date that may feature within the next phase.

The website

1. Do you believe that a website (as opposed to a ring binder or pack) should be the main mechanism for making information and resources available to colleges?

Yes

25

No

3

- I would like both
- At the current time both would be preferable but increasingly web-based.

2. Do you feel the website as planned, being a dynamic resource (as opposed to a repository for text) is a useful way forward

Yes

28

No

- Website must engage all staff (not just ICT teams). Integration is key to each college implementation process.
- In most cases, makes sense as a medium for communication in a fast-changing environment.
- Can be accessed by more staff. Pack can often remain with one member of staff.
- Issues initial pack (when ready) in print form. Update via e-mail.
- Might be worthwhile producing an initial hard copy for those staff who still prefer paper-based reference resources.
- Some concerns about website response times and availability.
- I will bookmark and visit the website.
- Dull website.
- Could maybe be embedded/linked in other web-based networks.
- The less copied paper the better!
- As we are focusing on ICT, I think this is essential – there is no option!
- Haven't seen it yet.
- All colleges have JANET connection and should use the capability.
- But it would be useful to have a hardcopy of core (Static) documents.
- Difficult to comment not having seen the website or the standards.

Staff Development Activity

3. Do you think that the best model to prepare people for self-evaluation (assuming these were fully funded centrally) is

- | | | |
|---|---|----|
| A | Workshops delivered in each college for all staff involved | 6 |
| B | Workshops delivered regionally with staff for different colleges for all staff involved | 3 |
| C | A series of central training events where colleges could select events/workshops from a series | 2 |
| D | Disbursing funds on a formulaic basis to colleges allowing each institution to map it's own way forward | 4 |
| E | Paying staff to attend (on a voluntary basis) an 'out of hours' workshop | |
| F | A combination of the above (please comment) | 15 |

- Agree, must be centrally funded.
- The above combination will allow flexible arrangements to be made for each college.
- A, B and C would be initially more expensive, but would be more effective in allowing staff to begin at appropriate 'start points' and to gain from sharing experience with colleagues elsewhere.
- If A is not feasible then C and D would be a useful alternative.
- There are a number of people involved in the self-evaluation process that need training. Would be difficult to release so many staff at the one time.
- We are competent to provide our own training in this area.
- Collaboration of B, A and C.
- In order of importance: A and D, C and E then B
- Start with a list of willing/enthusiastic staff then agree what is best.
- A, B and D. Need college ownership of the process.
- B then A.
- A followed by C looks like it would offer belt and braces method which should meet needs.
- Mainly all. A but linking with other colleges would be useful.
- Agree should be centrally funded – perhaps included in Stage 2 of project.
- B, C and D. This combination would work best.

4. Should the roll out of the work be supported by the colleges in phase 1 sharing their experience through being assigned time to work with colleges going through this for the first time

Yes

25

No

3

- This is essential.
- Build on experience, as in say TQM/SQM project.
- Colleges would benefit from translating experience from Academic Quality Assurance Quality Improvement into the support areas.
- This wasn't done very well with the existing framework, particularly the 'college' areas.
- Not sure of meaning of this question.
- Yes this is vital. There is normally too much reinvention of the wheel.
- We need to use best practice.
- Perhaps.

Organisation

- 5 The following have been useful within the first phase. Which of these do you feel should be an essential feature of any following work?

A A central (national) steering group organising and supporting the roll out

9

B Funds allocated to each college involved covering both the full cost of the release of staff *and* any training costs

13

C One co-ordinated national project with colleges working together

11

- All of above.
- Again, probably a blend of all!
- As colleges are at difference stages, funds being allocated would be more useful.
- This allows colleges to adapt to suit their respective needs.
- All three look useful!
- If these have proved to be successful, they should continue. The availability of funds to support the initiative until it is embedded nationwide is essential.
- Economies of scale always work best.

6. Experience of other sectors and other countries was useful in looking at the work in a wider context, should this be a feature of continuing work?

Yes

19

No

7

- Useful for benchmarking with the best.
- Colleges should be continually looking at other sectors for 'best practice' experiences, etc. Other countries experiences, in particular, USA particularly helpful as they are further ahead in developments.
- Particularly other sectors and some of the larger technology-based companies i.e. Scottish Amicable, et al.
- Private sector, other public sectors.
- Absolutely – why reinvent the wheel?
- Not sure if this continues to be so important now.
- Implementation rather than further research is now required.
- Again we must use best practice.

7. Do you have any general comment or feedback to help inform the progress of the project?

Phase 2 should be funded centrally. →

Culture change in views of ICT Teams essential (college-wide).

Involvement of all ICT staff must be funded (Initially).

College must follow a unified self-evaluation process (also funded). This activity is mostly conducted through in-house activity.

It would be nice to see those who have gone through both phases to assist those colleges who are about to embark upon self-evaluation. So the new colleges do not waste time as those who went through the pilot schemes must have done.

Information to support resource planning

Benchmarks

- PCs per technician (or services, software, staff etc)
- Salary
- Rate of change – new hardware, technologies or systems
- Setting priorities and staffing structures (e.g. security, performance and availability)
- Cross skilling and staffing structures

Information on data collection products

- Network management and monitoring software
- Online questionnaires with analysis.
- Helpdesk/servicing software with reporting.

1) Integration of the process into 'good' management systems

- Regular team meetings, objective/target settings
- Strategic ICT documentation/process outputs.
- Development plans
- Evaluative process
- Involvement 'customers/clients

Getting the above to actually work as an integrated process is difficult yet essential to ensure delivery of quarterly system.

2) MIS (Student Records, Stats, Access to information) is also important to include in this process – how do we do this?

Need for ICT staff to view themselves as vital to educational process *and* for other staff to see it too!

Process needs to be part of whole college approach.

Time required now to look at the website and digest the information. Important to discuss with other college managers internally about how to use the work done to date, and the material produced, to best advantage.

Phase 2 funding to include staff development.

I welcome this development.

ICT STANDARDS

Strategy

Quality Indicator	Notes	Evidence
Strategy is developed giving clear direction to ICT support services	Through engagement in development planning in all aspects of college functioning	Plans available Clear SMART objectives set
Strategic and operational plans for the service are fully communicated	Plans should be available, with key messages and objectives understood	Staff awareness Staff involvement
Strategic and operational plans are systematically monitored and reviewed against targets	Regular meeting and feedback on operational performance is effective, and formal review linked to wider college planning is in place	ICT objectives/targets in plans based on review Planning cycle available
Plans are informed by sound analysis of technological developments		Briefing papers Reports

Staffing

Quality Indicator	Notes	Evidence
Staff deliver the service mission effectively and efficiently	This is concerned both with the sufficiency of staff and their effective deployment	User satisfaction with service
Staff skillbase reflects the technological requirements of the service	The necessary range and level of skills should be represented across ICT supports staff [input here to staff development process]	Training records – Personnel
Staff development is planned and leads to improvements in service provided	There should be evidence of a systematic process defining staff development requirements (technical, operational, personal)	ICT Manager Staff Development Plans / Summary
Effective use is made of external expertise	The college should recognise when solutions may exist outwith its skillbase and call upon assistance in a timely manner with a well specified brief [input here to staff development process]	Examples if used

ICT Infrastructure

Quality Indicator	Notes	Evidence
The college network is robust, reliable with good response times from all stations	Network performance is critical, reflected in investment on appropriate infrastructure	0% non-planned "downtime"
College users gain good access to network and information resources	Access to extranet, internet, intranet services will be key issues and management of these services in a cost effective matter	User satisfaction - email - internet access - home directories - college web pages
Users have ready access to required applications software	Both generic and bespoke software are relevant here; links with processes to define user needs	Software available
Transparent processes of procurement are employed and value for money is secured	The process of budget construction should be fair and based on need identified through systematic procedures	Budget construction Development Plan
A rolling programme of system upgrade and equipment replacement ensures quality of provision is maintained / improved	The need for on-going investment needs to be recognised and planned for	Development Plan

System Administration

Quality Indicator	Notes	Evidence
College network is secure	Range of security issues – password control, external access, internet access, virus protection, policies	Security procedures Acceptable use policy
Files servers are logically structured and good housekeeping practices are employed to ensure efficient operation	Organisation of server resource should be designed to facilitate users access; policy should exist for allocation of disk space and written procedures for back-up and maintenance	Procedures
Application software resides in a secure environment	Location of application software will vary and reflect different access requirements	Procedures and practice
Network performance is analysed and improvements introduced	Full use should be made of modern network management tools	Data
Full documentation is maintained on ICT infrastructure and services	Includes both the physical infrastructure, any utilities written and applications software	Documentation
All legal requirements related to ICT operation are met		Procedures: - Data Protection - Copyright - Confidentiality - Licensing agreements and practice
Disaster recovery and continuity plans are clear and known by all staff	Disaster recovery plan Continuity plan Staff awareness	Plans should be discussed and tested at intervals

User Support

Quality Indicator	Notes	Evidence
User demands are dealt with in a courteous, timely and positive manner	Evidence from this can be collected from client satisfaction surveys, minutes of meetings and memos	Helpdesk response time: - hours - user satisfaction
Full and appropriate use of services is promoted amongst users	An active approach should be adopted to market services to users	Evidence of pro-activity
College operational plans are used to identify future support needs	Sectional and other operational plans will be key documents in planning future developments	Development plan: inclusive ICT planning
Reports from staff development and career review processes are used to plan support activities	Individual needs are formally recognised through this college process and links should be established	Staff development needs are met

Task Management

Quality Indicator	Notes	Evidence
Tasks are prioritised to give maximum benefit from available resources	Requests for work from various sources may exceed resources available at any point in time and priorities will have to be established	Methods of prioritisation are logical and clear to users
Major tasks are well defined and agreed	A key to developing user confidence in the service is delivery of requirements which should be clear from the onset or developed as part of project activity	Project plan, including targets
Necessary sub-tasks are defined, dependencies identified and resources allocated	In most projects, there will be complex relationship between the necessary sub-tasks which need to be analysed	Project plan clearly identifies this
Close monitoring of progress ensures completion within given timescales and to required standards	At a number of stages, progress should be reviewed against the plan and appropriate action taken	Evidence of regular review
Changes are introduced in a controlled manner with agreed revisions to project timescale / deliverables	There will be changes due to unforeseen circumstances and changing requirements - project management allows these to be managed	Evidence through regular review

Quality Assurance Arrangements

Quality Indicator	Notes	Evidence
ICT staff have a shared commitment to a quality service	Staff are clear about their own contribution to the work of the team and value the contribution of others. A quality culture exists with a customer centred focus	DATA from ICT team
Structures, systems and procedures exist to ensure ICT services college needs	Strong links should exist with key committees to ensure ICT issues are addressed in curricular, organisational and administrative developments	IT strategy group identifies key issues
The quantitative base of service performance is comprehensive and is used to support detailed analysis	Manifest through, for example, service level agreements, network performance statistics	Statistics Target setting
Reporting arrangements ensure accountability and engage college community in constructive debate on ICT issues		IT Strategy Group debate key issues and influence developments
Evaluative feedback is sought, considered and used	An essential ingredient of a quality culture – openness to evaluation from a variety of sources and preparedness to act on comments made	User satisfaction External evaluation Audit
Plans for improvement in ICT Services are appropriate and consistent with the college mission and development plan	Through contribution to development planning processes including publication of ICT operational plan	Development Plan IT Strategy Group minutes Other notes of meetings