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ABSTRACT

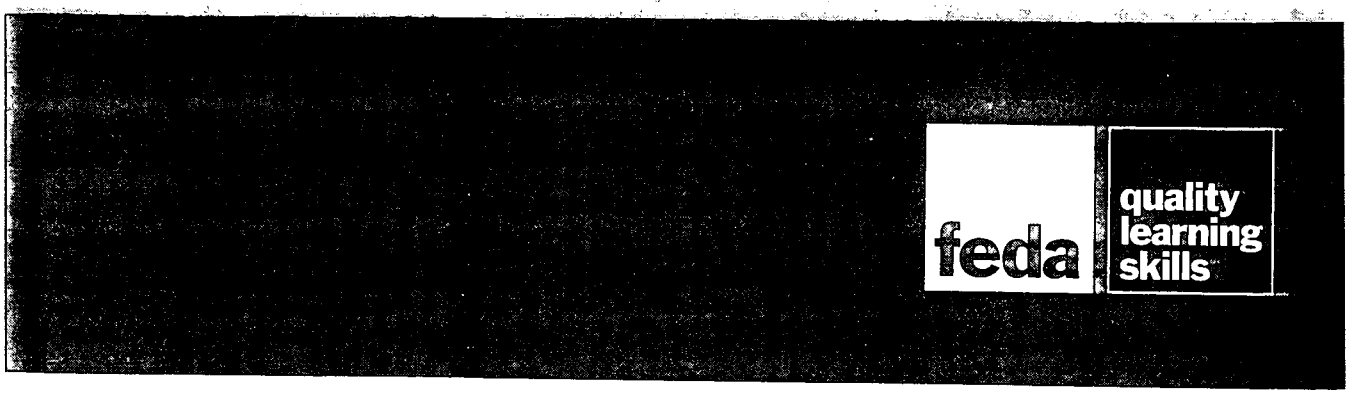
This booklet, which is intended for United Kingdom further education (FE) college staff at all levels, illustrates ways FE colleges have used information technology (IT) to manage their college information and ensure its accuracy. Section 1 provides an overview of the information-related problems encountered by FE colleges and summarizes key issues arising from the research, including the need for FE colleges to regard their information as college information (CI) rather than closely held management information. The following are among the topics discussed in sections 2-12: (1) vision, culture, and the role of management (promoting the use of CI and IT); (2) information system infrastructure (in-house databases, online assessment, new system development); (3) policy (practical policies for development, open availability of data, data checks, self-assessment); (4) procedures (key areas to consider when developing procedures, Intranets for publishing college procedures); (5) regular review; (6) auditing data; (7) development of online CI systems; (8) the CI manager (importance of separating the CI management role from the IT management role); (9) relationships with suppliers; (10) payback; and (11) good sources of advice. Section 13 lists two useful print sources of information for CI staff along with the addresses of five helpful organizations and Web sites. (MN)

feda quality learning skills

It's a people thing

demystifying college information

Jane Owen
with Jeff Alterman
and Phill Walkley



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1. Introduction

This plain English guide to college information systems (CIS) is intended to give colleges practical information and examples of good practice. Aimed at college staff at all levels, it shows some of the ways that colleges have made the most of college information (CI) and ensured its accuracy. As it is not a technical guide, it is hoped that even staff with little information technology (IT) knowledge will gain from it.

Since the Government's drive to raise standards of students' achievement, it has become apparent that a major area of concern is that of college information systems. Despite substantial resources being spent on hardware and software over the past years, there are still considerable problems in many colleges. These difficulties are recognised by FEFC.

> *Colleges continue to have difficulty in maintaining accurate data relating to retention and students' performance in examinations. When checking samples of data against primary sources, inspectors frequently find differences between the retention and achievement data kept by teachers, those kept by the college and those submitted to the Council.*

Managers responsible for the curriculum sometimes do not have easy access to centrally held data. The use by inspection teams of information drawn from the Individual Student Record (ISR) is providing a strong incentive for colleges to improve the quality of their data. (FEFC, 1999)*

Most of the problems experienced with college information are not with the hardware or software but with the systems that manage and support them. Consultants who support colleges in quality improvement through the FEDA Raising Quality and Achievement (RQA) programme have confirmed this.

Many colleges have established good practice for information systems. To identify some of this good practice, we contacted ten colleges that were accredited, had received excellent inspection reports or were beacon colleges, and were willing to share their learning with us.

A consultant visited each college and spoke to staff at different levels. The learning from this was then discussed at an event at which representatives from the colleges took part. The one-day event confirmed much of the initial findings of the research and previous feedback. The key message was that the differences between successful and unsuccessful systems are the people processes.

Unfortunately, there is no single solution to CI problems but it is hoped that, by learning about strategies that others have used, your college will be able to identify realistic ways to develop your own strategies.

An important point to consider is that no matter how well your system operates you can always learn from others. To help with this, each chapter of the guide contains practical examples of good practice from colleges involved in the project.

* FEFC. *Chief Inspector's annual report: quality and standards in further education in England 1998–99*, paragraph 115. FEFC, 1999.

Key issues arising from the research

- The principal and senior management team (SMT) must be seen to give clear and unequivocal support for the college information system 'from the top'.
- Information should be regarded as **college information (CI)** not **management information (MI)**.
- Centrally held college data is the only true data.
- Colleges must clearly establish what is wanted from the system before working on any CI development.
- Information must be freely available.
- The more access staff have to data and the more they use it, the more accurate it will become.
- Colleges should document and review their CI procedures.
- Staff should be trained to make good use of IT and information.
- Colleges should establish and maintain a good relationship with their IT suppliers.
- Colleges should share good practice and network with other colleges and organisations.

2. Vision, culture and the role of management

A culture of openness is a key precondition for an effective college information system. The CI vision must be led and maintained by the principal and be embedded in the thinking and actions of the whole senior management team.

The aim is to develop effective **college information** as opposed to **management information**. The term 'management information' tends to send out the message that the information is owned by the management and is solely for its use. The truth is that college information is there to support everyone in the college and its accuracy is everyone's responsibility.

Clear messages should be transmitted to all staff and reinforced by the principal's actions.

Key messages

- In any development phase (such as the expansion of IT and information learning technology (ILT) in colleges) there are few experts and, since the development affects everyone, everyone has to learn and adapt.
- College information is a **service** available for everyone who works in the college.
- IT is not going to go away.

The energy and resources put into implementation send an unequivocal message to staff about the importance of college information.

In best practice, there is a clear culture of prioritising college information and making it available to all college staff. A policy that promotes open access to data is a natural part of this.

The principal needs to define what is wanted from the college information system before any development work is started. In colleges where this was done successfully, college information was initially prioritised around punctual and accurate returns to the FEFC but very quickly encompassed much of the day-to-day activity of the college.

The importance of the principal in CI development

The following extracts are summarised from a paper produced by a college principal.

The principles of management employed in the college are:

- openness
- honesty
- decisions based on accurate information
- delegation within effective arrangements for control.

The effectiveness of college information is essential for accountability and effective internal management.

- Managers and staff are responsible for the accuracy of data.
- The CIS should be structured so that managers and staff can own data.
- Centrally held data is the only data that matters.
- Data is validated by other data.

Thus, the aims for college information will be:

- online enrolment
- a student and unit tracking system – online withdrawal, online achievement
- a register system to track students, room utilisation, staff utilisation
- online financial reporting
- a personnel system
- library management
- planning.

The principal's role in development

Before developing the new college information system, the principal set down some basic parameters, e.g. that there would be no on-screen menus. Instead there had to be:

- press button access to data
- a simple, flexible system for reading and data entry
- a secure system with a mirror system for daily use. The systems are linked with overnight processing of up-to-date data, so that if one server fails the mirror system will take over.

The simple, but effective view that the college should display a strong information vision as part of its communication strategy came directly from the principal, and was reflected in the appointment of a new information and communication manager.

College managers can stress the importance of college information to staff by their actions and by the resources they allocate to it. They should:

- highlight the need to spread expertise in accessing data and try to find ways of promoting the use of college information and IT in general
- emphasise that college information will become more accurate and reliable the more it is used.

Promoting the use of college information and IT

In one college, a range of benefits has been made available to staff to help them with computing and to encourage commitment to college information:

- PCs are given to all staff who teach more than 50% timetable. Staff can use these PCs, which come complete with software and a free Internet connection, at home. Alternative hardware is given to those who already have a PC.
- European Computer Driving Licence (ECDL) training is made compulsory but tailored to what staff will need on the job.
- The principal will not accept paper memos from staff. They must be sent by e-mail or the matter should be discussed in person.
- The principal requires all schemes of work to be on the college staff network by a given date and updated thereafter.

In another college, college information is on the agenda of every SMT meeting. The meeting itself is dependent on having accurate and detailed operational data.

It is important that the principal and SMT are seen to give clear and unequivocal support from the top. There should be no doubt that the principal values college information and the staff who deliver it. There should also be absolute support for the CI team from the SMT. College management needs to maintain that centrally held data is the only data that is correct.

A clear message that emerged from the research was that information equals communication.

Basing the college plan on fact

One college appointed an information and communication manager whose first job was to conduct a communication and information audit. The audits led to an action plan being created for the college.

From a college's communication audit:

Any proposed changes to the way the college communicates internally and externally must entail amendments to the nature and distribution of information that is being communicated. It follows that there needs to be a review of the way information is gathered, stored, manipulated and generated; of the nature and frequency of reporting; and of the individual staff development and responsibilities in this area.

Furthermore, the increased importance of the college database in the light of its direct relationship to FEFC funding demands that any information stored is detailed, accurate, complete and up to date. This principle underlies the identification, collection, analysis, manipulation and distribution of appropriate information and must guide any review and subsequent recommendations pertaining to it.

Recommendations

The following recommendations came from the college visits.

- Develop a coordinator role to maximise the effective use of accurate data.
- Create a 'reporting calendar' that identifies and prescribes the full annual cycle of all centrally generated reports. This should include: report title and general content, recipients, date of issue, purpose and responsibility.
- Review access rights to centrally stored data on a read-only basis.
- Develop a clearly defined process of access whilst promoting data protection and general security of information.
- Develop staff skills in inputting, accessing and using centrally stored data.
- Consider what new reports are needed by the college, e.g. bi-termly retention reports for programme team leaders.
- Increase the awareness and use of networked 'template' documentation, e.g. profiles, change of course forms, estimated grade forms.
- Rename the college reception 'information centre'.

Vision, culture and the role of management: summary

- College information needs support from the top.
- The CI vision must be led and maintained by the principal.
- Management information must be college information.
- College information is a service for all staff.
- Good college information depends on an open information policy.
- Everyone is responsible for data accuracy.
- The more data is used, the more accurate it will be.

3. Information system infrastructure

Elsewhere in this guide, the importance of clear vision, policy and procedures for information have been stressed. It has also been suggested that the term 'college information', as opposed to 'management information', emphasises the importance of the system and that it supports all college staff, not just management.

With these in place, a paper-based information system might seem an option. However, this is not to be recommended, even for the smallest college, as online, up-to-date data will always be more valuable to staff.

If staff are to access data, they must have a mechanism that allows them use of up-to-date information in an easily understandable format. Traditionally, this might have been paper-based but an online college network offers a much more effective alternative.

In-house database

In one college, a home-written database called *The timetable* has been built up over six years, onto which data from the main system is downloaded on a weekly basis.

The existence of a college-wide area network can be invaluable in promoting the effective use of college information. It is important to consider issues such as the extent to which a site is cabled and whether remote centres are also online.

Online assessment

The college has a live, online collection of data called the staff folder system, and all materials relating to self-assessment, target setting and benchmarking are immediately available.

At their last inspection, no paper was produced for inspectors; instead a briefing meeting was held and PCs were made available to each inspector. CDs of relevant data were produced ahead of time for inspectors to use. There were hyperlinks (underlined key words that direct you to related information by clicking on them) between self-assessment materials and evidence, and three years' evidence was available online. Work on hyperlinking began in November 1998 and was completed for inspection by January 1999. The college now feels it will never again need to jump through hoops for inspection. Staff folders will contain, as a matter of course, all the updated information needed.

Without sufficient hardware to allow college-wide access, the information, no matter how well presented, will not truly become college information. The ratio of networked PCs to staff is a major factor in promoting access to data and acquiring information.

Remember that while there may be nothing to equal face-to-face contact, internal e-mail is a much more effective and speedy way of communicating than paper memoranda.

Access to PCs

In one college, the existence of a PC in every teaching room was seen as the key to effective attendance monitoring. Some 90 teaching rooms were already equipped, allowing full-time students' attendance to be inputted straight into the student record.

In a number of colleges, PCs or laptops have been issued to staff with a teaching commitment of over 50% – a clear signal of the importance of using electronic communication and vastly increasing access to data published on the staff network. If you are considering following this example, remember that additional use of the system will have a knock-on effect on the effectiveness of the server. The capacity of the network server needs to be carefully monitored so that the increased use of the system does not drastically slow down its operation.

There are many examples of colleges using innovative software solutions to support the infrastructure, by working alone or in conjunction with other colleges. Solutions can then be shared with others.

Working with others

Four colleges are working together to develop an executive information system (EIS). This is software that delivers easy access to a suite of reports that provide managers with a rapid overview of college performance in key defined areas.

New system development

A system developed in one college, but of obvious use to all colleges, was written by the CI manager and an external software company. It tracks achievement against benchmarks and has an excellent drill-down facility (a facility to let you disaggregate data). The system has been sold to around 120 colleges.

Information system infrastructure: summary

- Staff need access to the data through networked hardware.
- Staff development must be informed by the CI strategy.
- Online real-time data benefits staff as well as the college.

4. Policy

A well-developed information policy will always impact on the successful use of college information. Some colleges maintain a written information policy; others have their information policy embedded both in the general management culture and in the quality policy and procedures. Regardless of the approach, colleges that have useful CI systems always address information somewhere in their policies. In the words of one principal, 'We live the policy.'

Some key elements of general college policy should interface closely with the CI vision, especially the absolute support from the principal for the CI team. This is particularly important in the early days of developing the CI system when there will inevitably be glitches.

New policy sometimes emerges out of poor experiences with previous CI software and the determination to find more effective software solutions. Here, the key aims for a new system (e.g. one that is simple, immediate, networkable) may form an essential part of the policy.

Practical policies for development

In its search for new software, one college resolved only to consider the purchase of software that could be demonstrated in a live, working situation. The requirement was adopted as a policy for all software procurement. *(Also see Chapter 10,* Relationship with suppliers.*)*

Access to data and openness is an important policy principle. Information in the college should be accessible to all relevant staff and be used on a daily basis. The development of a college network to which everyone has easy access might become a policy issue through this approach to openness. It was manifested in a college where a new lecturer noted that there were 'no secrets at the college'.

Open availability of data

One college publishes key performance data in its in-house newsletter every two weeks. The newsletter lists the following key performance data:

- staff actual teaching hours (against those planned), compiled on a daily basis from register data
- classes with less than the targeted attendance
- student achievement against targets
- withdrawal and retention statistics
- league tables of schools of study and their performance.

On the rare occasions when the principal had to talk to staff about possible redundancies, the information was freely available. The staff knew the data as well as the principal.

The CI policy is inseparable from the quality process in many colleges. This can be seen in two ways: that the self-assessment processes are totally dependent on access to accurate and up-to-date data and that the college information system itself is one of the service areas subject to rigorous review.

Quality/IT links – data checks

The quality manager at one college, who has well-developed IT skills, has a key role in calling people to account for missing data. He has also been instrumental in defining the information requirement at all levels of college operation.

Quality/IT links – self-assessment

In the college, documentation, procedures and results of self-assessment are published online for all staff. All data for self-assessment is accessed directly from the staff database.

Quality/IT links

In one college, the head of quality maintains the 'staff folders' database. This is an online intranet service for staff that holds all published data, both for the current year and for the past three years. The system also holds details of college quality processes, including self-assessment forms completed by each curriculum and service group and published for all to read. Staff folders hold all college instructions and procedures.

Finally, at the centre of any CI policy lies the assertion that there is only one legitimate set of data in the college – data which is held on the central CI record. There must be no secondary sets located, for example, at site or department level. The benefits of collecting and recording information frequently and accurately must be made obvious to staff.

Policy: summary

- Colleges need an information policy.
- A policy of openness is vital for good college information.
- Successful information policies are closely linked with quality policies.
- Central data is the only data.

5. Procedures

Mapping and documenting the procedures underpinning college information is an essential aspect of the good practice shared by the colleges visited during this project. The initial work of fully understanding and recording these procedures helps staff to understand how the system works and will explain why they need to meet deadlines and assure accuracy. Documented procedures also give a framework for review and development of college information.

It is also important that there is continuity in the procedures – that they are built up and reviewed over time and that they are based on processes familiar to staff. Producing clearly understood and universally accepted procedures facilitates greater use of college information and leads to greater accuracy of the data. Ideally, everyone in the college should be involved in data capture and data use.

Dramatic change is generally less preferable – though there are times when 'step change' is essential if a radical overhaul of college information or a part of its system is required.

Key areas to consider when producing procedures

- enquiry
- application
- enrolment
- achievements on entry

continued overleaf

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- achievements on programme
- attendance registration
- new staff induction
- review and self-assessment procedures
- review procedures for college information
- withdrawal and change of programme
- access to available reports
- calendar of reports (if appropriate. Some colleges have standard reports live on the network at all times)
- requesting of bespoke reports (including performance targets for service)
- destinations.

Not all colleges have discrete CI procedures but, like CI policy, they are sometimes embedded in the quality framework of the college.

In some colleges, CI procedures are paper-based manuals, and each procedure has clearly identified review and performance targets. They are also commonly found embedded in networked systems, possibly as help menus available for each section of the database.

Development and use of the college intranet for publishing college procedures

The college makes extensive use of web-based notice boards (soon to be transferred to the college intranet) for publishing all college procedures. All procedures are kept up to date. As a result, access to and awareness of procedures is high among staff.

Procedures: summary

- Mapping and documenting CI procedures helps staff to understand the system.
- Documented procedures give an excellent basis for ongoing review.

6. Regular review

All of the colleges that took part in this study have a formal method for reviewing the CI system. In some colleges, a college-wide user group reviews the information. In other colleges, the CI system is reviewed through constant use.

Senior management teams take a leading role in this review process and maintain a high level of awareness of CI use and development needs. Parameters may be set centrally but, in many colleges, everyone is responsible for reviewing the quality of college information.

The review of college information is also covered by the quality procedures of the college, and formal review of college information takes place alongside that of all college services as part of self-assessment. It also takes into account the college-wide use of the system and comprehensively addresses the areas examined and the staff users consulted.

Using all staff for review

In one college, the system users' group comprised nominated representatives from key areas of the college, but the group was also open to anyone else who wanted to join.

The CI review and production of a development plan also inform the college's strategic plan although, for many colleges, CI development will itself be one of the strategic priorities.

Colleges should take advantage of any informal review undertaken by external groups to which the college belongs. Such groups might include: a principal's group, a regional group of CI managers or a user group attached to a particular software house.

Examples of questions to be addressed during a CIS review:

Current needs

- What information does the college need from the college information system?
- What information do the staff need from the college information system?
- Does the college information system provide reports in a format that staff can understand?
- Do external customers require information from the college information system?

Future needs

- What are the future CIS needs of the college likely to be?
- What impact is the college's long-term strategy likely to have on its CIS needs?
- Are there any changes to, or additional requirements for, information from regulatory or funding bodies?

IT capability

- Is the network capability sufficient for the needs of the system?
- Is there sufficient access to the system for staff – PCs, printers, off-site access?
- Does the software meet the needs of the college and its staff?

Staff interface

- Are staff trained to make best use of the system?
- Is data entry timely and accurate?
- Do staff follow procedures?

Consultation and promotion

- How widely used is the college information system?
- How is the college information system publicised and promoted?
- How are CIS users consulted?

Innovation

- How does the college keep up to date with technical and procedural innovations?

Regular review: summary

- College information must be reviewed regularly.
- CI review should inform the college's strategic plan.
- Colleges should make use of external opportunities for review.

7. Auditing data

Staff at many colleges do not trust centrally held data, and so keep their own sets of records which they feel are more reliable. However, this information does not get passed on to other staff and is not verified by other sources. Centrally held college data is the only true data but, to enforce its use, it must be accurate.

Colleges invest a great deal of time in auditing data – checking and sometimes rechecking to ensure it is correct. Perhaps too often this is done by issuing specific lists to be checked and returned.

Best practice occurs when data is continuously audited during use by as many people in the college as possible. By being visible and by being checked in everyday use, the data becomes self-cleansing.

Electronic register systems can be powerful data auditing tools when regularly used. Downloading a class list from the student record provides several opportunities for cleansing data. The lecturer can use it as a register for a class meeting, collecting data on a daily basis. At the same time, the data will give information about the accuracy of a student's enrolment, attendance (for pastoral purposes) and withdrawal. The college also gains information on overall room use and staff teaching hours.

Similarly, colleges that use their information system to generate re-enrolment forms and learning agreements considerably reduce form filling. Students simply endorse existing information by means of one signature. This helps to ensure that the centrally held data is correct.

Examination and assessment entry forms produced from the information system will similarly ensure that students are entered for the correct assessment and that only these students will be expected to have achievement data entered against their name.

A rapid turn around on inputting amendments is essential for clean data and helps to motivate staff both to contribute new data and trust the data that is available. Confidence in college information will inevitably suffer when a withdrawn student's name remains on a register for weeks after leaving.

Work to gain enthusiastic staff support. If staff understand the benefits of good data, they will drive CI development. Remember that if the review and self-assessment processes rely on detailed and accurate data, these key college processes then drive the college information.

All staff to use data

Everyone, not just the CIS team, should recognise the benefit of up-to-date data. A head of engineering commented, 'Because it's genuine data we can ask the questions and trust the answers.'

Data – an integral part of college management

At one college, the following meetings form the core of college management:

- quarterly performance monitoring meetings (for programmes and service areas)
- twice-yearly, small-group meetings of staff with the principal and the work of the internal audit team (reviewing 90 programmes a year).

They both demand detailed, timely and easily accessed data.

Finally, colleges must publish data as widely as possible to ensure everyone's participation in the information process and everyone's chance of benefiting from good information. This will only come from a genuine open information policy.

The principal is involved in using the data

All programme managers meet the principal four times per year to review course performance in terms of recruitment, retention, attendance, punctuality and achievement. A 'culture of accountability' exists at programme manager level that ensures a commitment to data accuracy.

Auditing data: summary

- The central data must be trustworthy.
- Regularly used data becomes self-cleansing.
- Widely used data becomes self-cleansing.

8. College information – development

The colleges included in the study revealed extremely focused approaches to developing their college information. Vision and policy were translated into development strategies, which then featured strongly within college strategic plans.

When developing college information, the initial significant issue for colleges was prioritising resources for hardware, infrastructure and software. CI managers were usually found to have close links with the technology manager. Both worked very closely together on strategic planning issues.

Colleges identified the key to ongoing development of their college information as less technology-focused and much more dependent on people-focused activities.

Although colleges often made innovative use of technology, in some cases systems operated without using available technology. At one college, a traditional heavily paper-based process (register production and monitoring) was still in use. This worked well because it was a people-focused process.

Two fundamental features of success:

- Good communication between staff and the breaking down of departmental barriers. This includes extensive consultation and staff involvement right across the college.
- The colleges considered staff development essential to an information strategy. This included a focus on college information as part of the initial induction on joining the college.

Role of the CIS user group

The college ensured that information requirements were identified via a cross-college user group that represented academic and business support staff at different levels. The group met to consider the usefulness, or otherwise, of current reports, the methods used to access them, and to prioritise future information requirements.

New staff induction

The college developed an administration pack that was supplied to all new staff as part of the induction programme. The pack contains internal forms and guidance notes.

In addition, over 120 staff had attended workshops arranged to brief staff on data capture processes and information availability.

Academic and business support staff required not only good communication but also guidance on data capture procedures and identifying and accessing information. Some simple ways to promote the development of staff skills are:

- encourage staff to use e-mail
- discourage paper memos and forms
- equip staff with PCs and laptops
- use external training drivers such as the European Computer Driving Licence (ECDL)
- train staff in the best use of the IT tools available within the college
- provide time for staff to maintain records.

Online access for all staff

The college ensures that online access is available for all staff. Staff are responsible for accessing information themselves rather than expecting a paper-based information delivery service.

Curriculum managers and academic staff should have key roles in developing both the student information systems and the information outputs.

A critical success factor is 'curriculum mapping'. This ensures that the college's curriculum, and the way it is offered, is reflected in the way the curriculum is set up on the college system. By using curriculum mapping, colleges in the project were already Curriculum 2000 aware and were identifying the implications of flexible and modularised curricula.

The majority of the colleges participated in either local, software-based user groups or national groups such as the National Information and Learning Technology Association (NILTA) computerised management information system (CMIS) group. They were prepared to share experiences and expertise and to learn from other colleges' solutions.

Membership of the local CIS group

The CIS manager attended a bi-monthly meeting of some 30 colleges at which issues of common concern were discussed and good practice shared.

Membership of a supplier-based consortium

The college belonged to a group of colleges undergoing a major system change. The colleges agreed that each would take responsibility for an aspect of the change and then provide support to the other members of the group.

Many of the colleges stressed the importance of their relationship with the supplier of the student information system software in planning CI development. This relationship was often cooperative. However, in some cases the college's requirements needed clear management by the college itself.

Several of the issues highlighted were around timescales for new software releases and the significant detrimental effect of software upgrades on existing college information delivery.

Software suppliers were often more valuable in ensuring that tools were available for developing the college's own information front-ends or executive information systems than supplying suites of pre-determined reports as part of their packages.

Colleges used a variety of reporting tools to extract information and present it to staff in formats which best met their needs. These could take the form of either online access to a set of key reports or a paper-based distribution of reports to an agreed schedule. Many were now developing a college intranet to distribute information on both policy and procedures, and provide access to key college information in a user-friendly format.

Mix of online access and static reports

The college had developed online access to key reports but additionally produced a set of static reports on withdrawals and retention (weekly) and enquiries (monthly).

Well-developed information desktop

The desktop information available via a college network was developed over five years. Originally available as a means to ensure data was challenged and corrected, it is now relied on as the source of all key college information. College reliance is such that a move to a new Windows version of student-tracking software had been delayed to ensure that a new desktop would be available of a similar quality.

College information – development: summary

- Ongoing development of college information is a mainly people-focused activity.
- Communication is key to CI development.
- CI development should be based on college and staff needs.
- CI development relies on staff development.

9. The college information manager

In the colleges visited as part of this study there had been radical and sometimes frequent changes to the staffing structure since incorporation. Although this was most evident in academic and senior management structures, which had generally become flatter, there had been considerable change in the business support structures operating within the colleges.

No two colleges in the study had identical structures but there were some common features:

- The CI manager (or the person whose role included this function) normally occupied a third-tier post. This means that they were managed by an associate principal, assistant principal or a director who themselves normally reported directly to the principal. The CI manager's line manager was a member of the college's senior management team. Accountability to the senior management through the line manager was a key feature of the post.

CI manager at third tier but is member of college management team (CMT)

Although at third-tier level, the head of college information (together with the personnel manager) is a member of the college management team. The college believes this ensures that all CI issues (e.g. data discrepancies) are dealt with at CMT level.

Information and data processing have a single CI manager

A single CI manager is responsible for data collection (academic records team) and information provision (systems support team). The college believes this link through the manager is necessary to ensure that data input is aligned to planned information output.

- In all cases, part of the structural development had seen a total separation of the information manager's responsibility from that of management of IT and technical services. There was recognition within the colleges of the importance of the role. Postholders' remuneration often reflected this.

Stable staffing in key positions

The key managers in CI-related posts – the registrar, director of planning and head of MIS (here a technical post) – work very closely together and have been retained in post throughout the key period post-incorporation. The college recognises the value of such stability.

- CI managers were communicators with a sound knowledge of their institutions, including a detailed understanding of the college curriculum. The managers had often developed within the institution post-incorporation and had a high profile throughout the college.
- All colleges recognised the key role of examinations staff in data cleansing both at the point of examination entry or registration and in the identification and recording of achievement. This internal audit function was recognised as a key role and had also resulted in some reappraisal of the location of examination staff in the college structure.

In addition, the colleges had given considerable thought to the impact of maintaining an effective CI system on the CI manager's day-to-day role, particularly their:

- line manager
- physical location
- key working relationships
- relationship to the data-capture process.

Structure and geographical location of the CI manager

The college has a small CI team (head +2) reporting to the director of finance. Exams and admissions and marketing report to different directors but the structure is permeable. This is re-enforced by the location of these functions in a central geographical location. This 'information centre' contains admissions, exams, the quality manager, accommodation/timetabling and the CI team.

Location of exams section

The college considered the examinations section critical to ensuring clean data and maximising its FEFC funding. In its new structure the exams section was separated from other registry operations and placed under a funding manager reporting to the director of finance.

Many of the larger colleges had developed strategies which identified support staff at academic department level with specific responsibilities for ensuring data quality. These staff were line managed either locally (e.g. department office manager) or by central staff (e.g. registrar). In all cases, they acted as a conduit between central data and information managers and academic staff.

The CI manager: summary

- Recognise the importance of the CI manager.
- The separation of the CI role from the IT management role has benefited colleges.
- CI managers need to be good communicators.

10. Relationship with suppliers

Colleges often complain that the software and hardware supplied to them do not live up to their expectations. To overcome this, it is vital that colleges are clear about what they require from their CI system before they approach suppliers. For example, one college wanted software that was 'simple, immediate and networkable'. The same college resolved that it wanted to see actual software in a real working situation – not a demonstration version. Colleges emphasised the need for preparation before meeting with any supplier.

A number of colleges had rejected the 'off the shelf' software solutions available on the market and had commissioned their own software from external providers. This, of course, requires detailed systems analysis and specification, and also carries the risk of exposure should problems occur with software or the provider go out of business. It also presupposes (or certainly would be assisted by) a certain level of programming ability in the CI team. The advantages to the two colleges in this study that went down this route lay in having software closely tailored to the needs of the college and designed to be responsive to the culture and style of the institution.

Ongoing relationships with suppliers in this situation need to be closely maintained at a professional level. This should especially be the case where a complete proprietary system has been purchased. Arguably, colleges have tended to be too passive in such relationships and, as a result, have not been clear about the support available after delivery of the goods.

Relationships with suppliers can have positive or negative effects on the development of college information. Positively, the existence of a users group set up around a supplier's product gives the opportunity for an exchange of ideas on a regional or even national basis. Where a supplier is introducing a new product range, a group of colleges can form a consortium with each college representative aiming to become an expert in one area of the new product. This enables colleges to cascade training and also act as a secondary source of ongoing practical information in addition to the supplier's own helpdesk.

Cost-effective solutions can be found if the CI team works closely with suppliers.

Computer leasing

In one college, computer equipment is leased, not purchased. In addition to new machines that are added annually to the establishment, a quarter of the college's computers are replaced annually as part of a four-year leasing cycle.

Campus agreement

A college has signed a campus agreement on software that is more cost-effective than individual licences. This means that all staff (and all students, as a bonus) can use the software at a cost of approximately £10,000 per annum, with latest software updates provided automatically.

The installation of a new software solution, especially in an environment that has been carefully prepared for it, can assist the process of spreading expertise through the college. This happens both through the training provided to operate the new software and through the sense of expectation that arises out of what is perceived as a move forward.

Finally, as a warning, an example was given of the problems that can occur when the relationship with a supplier is not what it should be. In one college, a server and new software sat unused for many months as a result of the software supplier suggesting that another software solution marketed by the same supplier might be a better option.

Relationship with suppliers: summary

- Prepare before meeting suppliers.
- Confirm ongoing support in writing.
- Consider the relative benefits of off-the-peg and bespoke software systems.
- Consider the relative benefits of leasing and buying hardware.
- Review the college software agreements.

11. Payback

Good CI systems have payback to participants. The range of benefits that come from an effective CI system can help to sell the need for change and staff training to a perhaps cynical and reluctant staff.

In the colleges visited, there was recognition that in any data collection process there was an information payback to participants. Emphasis was given to the fact that data collection supported college information requirements, not just management needs.

Having a CI strategy means that project implementation does not focus solely on data collection issues or external data requirements. The need for a major system change will be made more pressing by the need to improve internal information. In addition, colleges recognised that college information would not develop unless staff could identify an obvious return for their participation.

Effective register systems may require considerable staff input during initial development. However, the ability to track students' attendance and retention by consulting a series of screens on the college network, rather than chasing paper and individual tutors across the college, benefits many front-line staff.

Formative assessment-tracking system

The college had developed an in-house formative assessment-tracking system. The system had been decentralised and curriculum team administrators carried out data input with academic tutors supplying assessment data. Faculty managers used the system to ensure that academic tutors had submitted assessment plans and then that student assessments were being set and assessment marks submitted.

Academic tutors themselves were committed to the system, as they were able to access reports that included an individual student 'late assignment' check.

Digital image capture

The college had implemented a digital image capture system, primarily to assist college security. However, an information front end had been developed which allowed academic tutors to produce class lists that included student images. It was also possible to search for a student image by name or part of a name.

Another very powerful selling point to staff is that online data will reduce the number of forms they will have to fill in and the requests they have to deal with for information on students.

Use of internal e-mail for absence reporting

As part of its retention strategy, the college had implemented a central absence log:

- All students contact a central number to notify their absence.
- Absence information is e-mailed to personal tutors.
- Subject tutors report all absences to personal tutors by e-mail.
- Students with unauthorised absences. are chased quickly by personal tutors.
- E-mail printouts are held on student file as audit evidence.

An additional payback is that online achievement, retention and destination information can reduce much of the administrative work-load for self-assessment. As we have seen elsewhere, one college produced all data needed for inspection online and intends to maintain such data so that never again will an impending inspection require super-human efforts to collect paper evidence.

Payback: summary

- Good college information must offer a payback to encourage staff to use it.
- Colleges need to actively promote the benefits of college information to staff.

12. Sources of good advice

It is easy for a college to think that its problems are unique. Similarly, good practice in college information often stays within an individual college rather than being disseminated. This guide aims to overcome this situation.

There is a huge pool of skills and experience within further education that is waiting to be tapped into. Cooperation with other colleges in regional consortia or twinning with local colleges are good sources of support. Don't feel constrained by locality when looking for partner colleges, try colleges in other regions.

Links with CI staff from other colleges

Some colleges are members of consortia for college information and curriculum development, arranged as a wide area network (WAN).

In the North West, CI managers meet on a bi-monthly basis, representing some 30 colleges.

The commercial sector is an area of expertise that appears to be untapped. But given the enormous amounts of data moved by, for example, a bank and the high degree of accuracy required, people active in the commercial sector have often overcome information problems far in excess of those of colleges.

External links

Some colleges develop external links by providing destination information to partner schools and trends in recruitment/ employment to neighbouring colleges.

This guide has shown how colleges have come together when faced with major changes instigated by their software supplier. In one region, heads of college information meet on a regular basis. In the same region, principals of sixth form colleges meet and bring back valuable CI ideas into their colleges.

FEFC circulars, inspectors' reports, websites, FEDA publications and training are also invaluable sources of good ideas – as is membership of professional associations such as NILTA. The colleges visited often had a key member of staff responsible for receiving FEFC circulars relating to the ISR and funding, and for retrieving data from the FEFC website. Dissemination of circulars or summarised key information from them for circulation within the college was considered important. This was recognised as particularly significant in strategic planning where funding changes might have a major effect on curriculum viability, or ISR changes might require appropriate changes to enrolment documentation and process for the following year.

Project funding

Putting in consortia bids for project funding can provide valuable extra funding for infrastructure development. In one college the network cabling was provided from this source.

Finally, some colleges are making good use of consultants who work with staff to improve the use of data and the overall effectiveness of the college information systems. For more information on FEDA's Standards Fund direct on-site support from consultants, contact the RQA Quality Improvement Team, Tel: 020 7840 5416.

13. Some useful publications, contacts and websites

Publications

Information requirements for decision makers: a practical handbook. Jill Attewell *et al.* FEDA publications, £12.50

Towards better student tracking systems. Jill Attewell *et al.* FEDA publications, £5

Contacts

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Becta
British Educational Communications and Technology Agency
Milburn Hill Road
Science Park
Coventry CV4 7JJ
Tel: 024 7641 6994
Fax: 024 7641 1418
Website: www.becta.org.uk

FEFC
Further Education Funding Council
Website: www.fefc.gov.uk

NILTA
National Information and
Learning Technology Association
Head Office
c/o Leeds College of Building
North Street, Leeds LS2 7QT
Tel: 0113 234 3598
Fax: 0113 234 0879
Website: www.nilta.org.uk

NLN
National Learning Network
Website: www.nln.ac.uk

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- We aim to reach all colleges and all levels of staff.
- We offer extra support to colleges that are receiving Standards Fund money to improve their practice.
- All our activity themes are backed by a programme of research and evaluation.
- The Raising Quality and Achievement (RQA) programme is sponsored by the DfEE and all activities are subsidised.

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