Quality management and process improvement in information technology

Kirkham, JA

Title	Quality management and process improvement in information technology
Authors	Kirkham, JA
Type	Monograph
URL	This version is available at: http://usir.salford.ac.uk/2111/
Published Date	1998

**Quality Management and Process Improvement in Information Technology**

John Kirkham, IT Institute.

1. INTRODUCTION

This TLQIS Grant forms part of long term project to develop independent-open-distance at both undergraduate and postgraduate levels. This report will give an overview of approach.

2. TEACHING AND LEARNING PROCESS

In my opinion one of the problems with modules is that they tend to create "islands of knowledge" and do not allow the learners to cover the material in depth or in breadth.
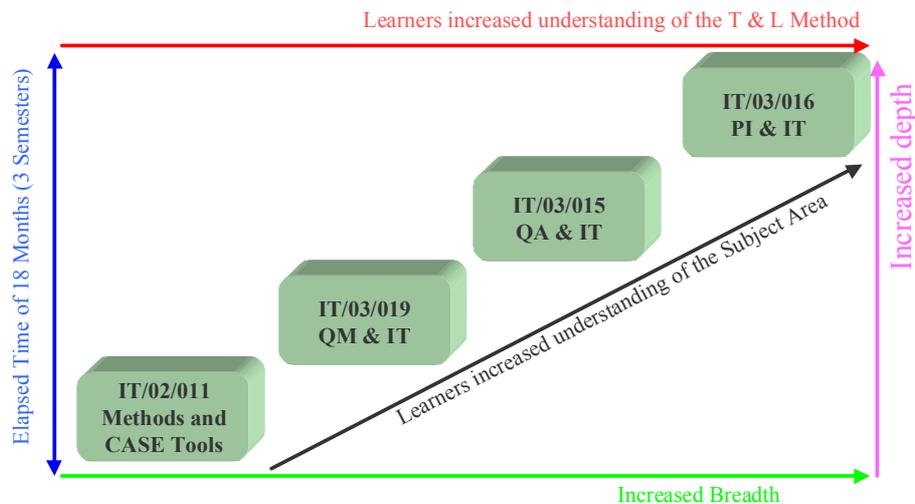
2.1. The approach I have adopted is too combine four related modules into a subject area called "Quality Management and Process Improvement in Information Technology" (see the Diagram above). The modules are all optional and are part of the BSc in IT(Hons) offered by the IT Institute. The Methods and CASE Tools module is offered in the 2nd semester of the 2nd year, and the other modules in the 1st and 2nd semesters of the final year. Offering a series of modules over eighteen months gives the learners the opportunity to absorb and digest the material and have an increased understanding of the subject.

Each module is divided into, typically, three to four units that address particular topics (see diagram opposite). For each unit there are lectures, videos and tutorials to help the learners understand the material. There are also materials on the Internet, Intranet and in the Library. Background work is not assessed but helps the learners get to grips with the subject. There are also continuous assessments and
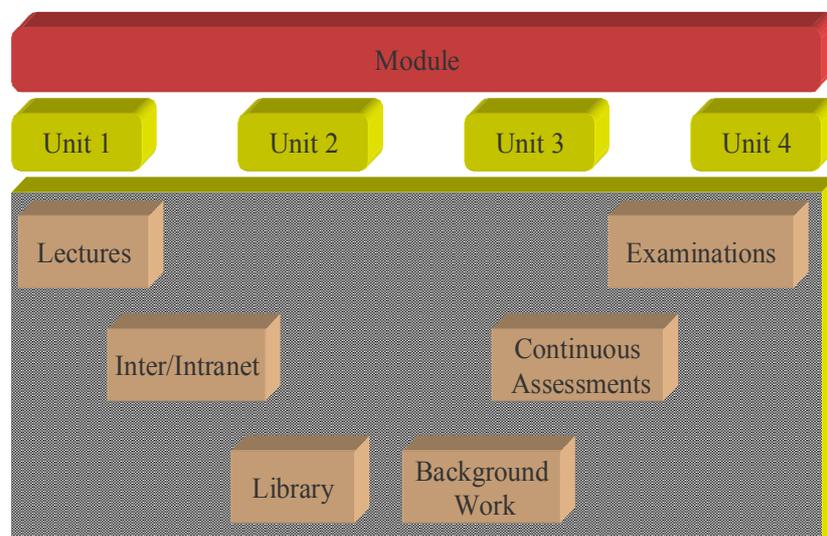
examinations (both formative and summative)

The diagram below summarizes the Teaching and Learning Approach. Typically 4-5 lectures are given to introduce the learners to the subject. The lectures either consist of a 30-45 minute video followed by a discussion or a Power Point Presentation/discussion. The objective of the lectures is to get the learners interested in the subject and put over the concepts. Once the lectures are over they are replaced by tutorials. Learners can either book appointments using e-mail or present themselves at the lecturer's office for the tutorial.
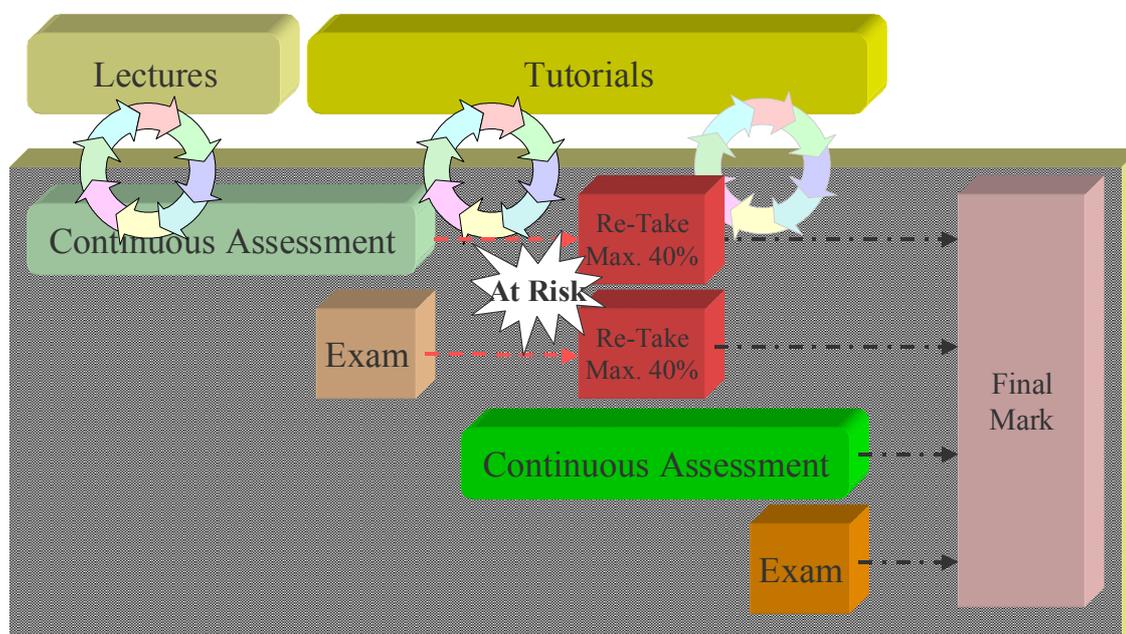
Typically the 1st continuous assessment is based on Units 1 and 2. The learners have a choice of the continuous assessment they have to do. Typically each unit has 2-3 assessments and the learners can choose an assessment from either unit. Interestingly the learners have to research all the assessments before they choose. This means they have to gain a broad understanding of the material in Units 1 and 2. Compare this with the usual way of assessment where the learners are given one assessment and all they do is use the material for that assessment and ignore the rest. The examination, which is a formal closed book assesses **ALL** the material in Units 1 and 2. The assessments have been designed so that they can be quickly and accurately marked so that the learners get the feedback as quickly as possible.

If a learner fails the Continuous Assessment or the Examination they can take them again and will receive a pass mark of 40%. These learners will considered "**at risk**" and will be required to attend a tutorial to review their performance. The assessment for Units 3 and 4 follows a similar pattern and re-sits are only allowed for 2nd Year Learners but not for Final Year Learners. The Final Mark (summative) is calculated from the four marks. The learners have some difficulty in understanding the assessment approach in the beginning but by the end of the Subject Area they seem to have no problems. In general the learners seem to like the assessment approach as they can see how they are progressing.

2.1.1. Teaching and Learning Materials

The teaching and learning materials are stored as an Intranet on the ITI File Server, see following diagram. The Intranet can be found at **http://www.salford.ac.uk/iti/qmit/** and was constructed using Microsoft Word, Power Point, Explorer (Browser) and Front Page. This simple use of standard Microsoft software means that all teaching staff should be able to design, develop and implement such an Intranet. The Intranet consists of a "Subject Area Framework" which describes the framework and how the modules are related. Each module then has its own framework that describes the units and how they are related. The Teaching

and Learning Material for each module are stored as an Intranet. This comprises be-spoke elements, materials and assessments, developed by the tutor and references to Internet material. It is my experience that many tutors give references to Internet material without giving the learner an appreciation of its significance and where it fits into the module. My approach is to copy the overview/introduction, suitably referenced, into the Intranet so that the learner has an overview of the material which can then be studied, in depth, at a later time.
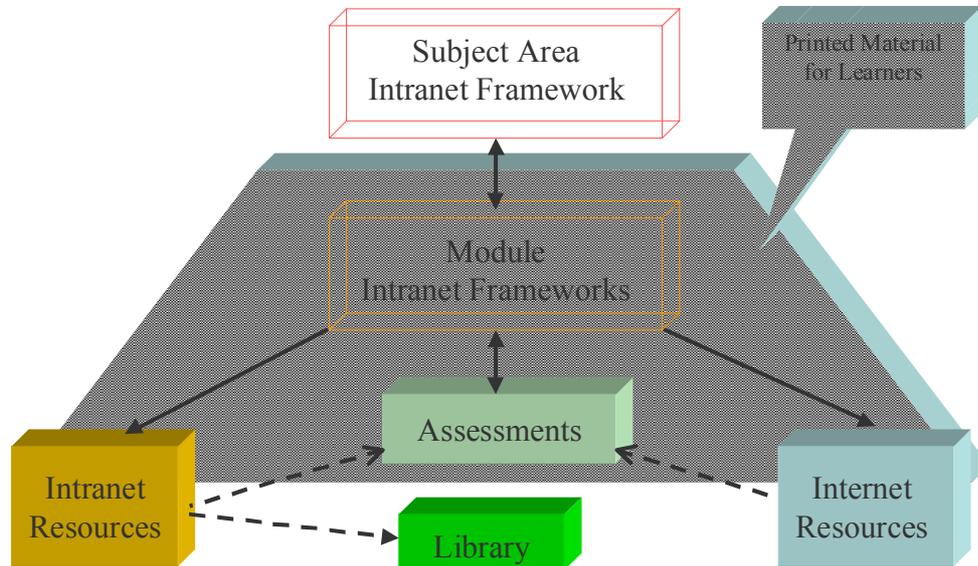
Learners do not have access to the materials at all times as they may be at home, travelling, lying down etc. Also, it is my experience, that learners do not like to always have to access the material in electronic form. I print out the materials that give an overview of the module and its units so that the learners have access to some or all of the material at all times.

2.1.2. Developing the Teaching and Learning Approach

❧Parallel - Iterative approach:
- Module Specification
- Materials
- Assessment
- External Review

❧Microsoft Productivity Tools
- Word, PowerPoint, Front Page, Browser
- **NOT** technology driven

❧"Rapid Application Development"

A parallel iterative approach is used to develop the materials. A draft module specification is written, some materials and assessment approaches analyzed. This process is repeated until a draft is completed. All the materials are then sent out to an ITI Associate who reviews the work and writes a report. All the points in the report are addressed and the material updated where appropriate. The review provided by the Associate is annotated and returned to the Associate together with a letter explaining what has been carried out. All the materials are developed using standard Microsoft tools and the approach is not technology driven. This way, in System Development Terms, is called Rapid Application Development. This approach is characterized by the use of IT Tools, in this case Word, PowerPoint etc, and independent external peer review.

2.1.3. Quality of Teaching and Learning

To ensure that the modules complied with the Teaching Quality Assessment (TQA) all aspects of the modules where checked against "The Quality Assurance Agency for Higher Education Subject Review Handbook, October 1998 to September 2000"

🙠 Module Box File

🙠 Index of Contents

- External Reviews
- Module Reviews
- TLQIS Grants
- Student Progress
- Student Monitoring
- Formative/Summative Assessments
- Associates Contribution
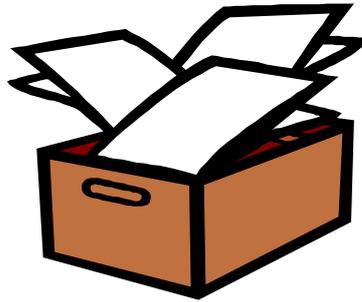
Also on the advice of one of our external examiners I have set up a module box for each of the units. This box holds information that provides "Objective Evidence" to demonstrate to the TQA Assessors that I have developed and implemented a series of "Quality Modules"

2.1.4. Summary

This TLQIS Grant forms part of long term project to develop independent-open-distance at both undergraduate and postgraduate levels.

This report has given an overview of approach describing how the various aspects of the Teaching and Learning Process have been developed.

It is too early to say how successful the approach has been. Informal feedback for staff and learners has indicated that there seems to be no serious problems.

This is very encouraging as it means that the approach has a good solid foundation that can be continuously improved.