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Abstract

This thesis examines the potential of a learning outcome-led model of curriculum design to influence how students perceive learning in education studies within a modular context of a new university. It identifies and compares the conceptions of learning held by students and lecturers on traditional and outcome-led modules, and it explores and specifies the design factors which shape these conceptions. The issue is located within the interpretivist paradigm for the research seeks understanding which derives from the perceptions, attitudes and beliefs that students and their lecturers hold about learning in a given context. But the methodology employed is not wholly consistent with this paradigm, for a qualitative approach is complemented by the use of factor analysis techniques to facilitate the identification of the design features which influence how students perceive learning. The approach is thus eclectic drawing on quantitative methods to examine what is essentially qualitative data.

An innovative model of learning outcome-led design is proposed, implemented and modified as a result of the research. The learner is placed at the centre of the learning experience which is defined as incorporating three domains: the teaching context; the assessment régime; and the directed learning undertaken by students outside of taught sessions. The model incorporates a trichotomy of outcomes which define the subject-specific, the transferable skills and the generic academic outcomes which influence directly both the content and process of learning, and which successful students are expected to achieve on completion of a module. The findings show that four design features influence how students perceive learning: the clarity of expectations; congruence between the content and process of each domain of the learning experience; direction in respect to the learning activities which should be undertaken in each domain to achieve the outcomes; and the content and process of the teaching context. The data suggest that a much higher profile should be given to metacognitive skills in curriculum development in HE because how students perceive both the process and the content of learning profoundly influences their conception of learning and, consistent with the underpinning theory, how they approach learning and therefore ultimately the kind of outcomes they achieve.
The research leads to recommendations for the modification of the three models of learning in context Ramsden (1988); Biggs (1990b) and Prosser (1995) which are presented and analysed in the thesis. The findings suggest that the learning experience should be redefined to specify the three domains - the teaching context, assessment régime and directed learning - and that clarity of expectations, metacognitive skills and congruence between the content and process of learning in each of the domains should be articulated as directly influencing students' conceptions of learning. The models should also seek to indicate that learning outcomes influence how students perceive learning, and that therefore they feature both at the starting point and as the end product of a contextualised learning process.

The findings relating to students' conceptions of learning show that the study of outcome-led modules has resulted in a much greater degree of congruence between how lecturers and students perceive learning in a given module and that fewer students studying outcome-led modules hold a quantitative conception of learning. This suggests that the outcome-led model does have the potential to improve teaching and learning and consequently that there is an educational rationale for curriculum development premised on this model.
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**Glossary/Abbreviations**

AGR  Association of Graduate Recruiters  
APEL  Accreditation of Prior Experiential Learning  
BTEC  Business and Technician Education Council  
CAT  Credit Accumulation and Transfer  
CMS  Conceptual Map Survey  
CEQ  Course Experience Questionnaire  
CNAA  Council for National Academic Awards  
CPQ  Course Perceptions Questionnaire  
CVCP  Committee of Vice Chancellors and Principals  
df  Degree of freedom  
ED  Employment Department  
EHE  Enterprise in Higher Education  
FEU  Further Education Unit  
GNVQ  General National Vocational Qualification  
GSP  Graduates Standards Programme  
HE  Higher education  
HEC  Higher Education for Capability  
HEQC  Higher Education Quality Council  
IT  Information technology  
MCI  Management Charter Initiative  
MODDS  Modular Degree and Diploma Scheme - the undergraduate modular award within the University of Wolverhampton  
NCVQ  National Council for Vocational Qualification  
NU.DIST  Non-numerical Unstructured Data Indexing Searching and Theorising  
NVQ  National Vocational Qualification  
P  Probability  
R. 013  Respondent 013  
RoA  Records of Achievement  
SCHOOL  An administrative unit within the University of Wolverhampton  
SCOTVEC  Scottish Vocational Educational Council  
SPSS  Statistical Package for the Social Sciences  
UDACE  Unit for the Development of Adult Continuing Education
Chapter 1
The Research Issue and Context

1.0 Introduction
Since the publication of the Robbins Report (1963) higher education has undergone immense change shifting from a "premodern to a modern institution" (Barnett, 1994, p. 3). Formerly perceived predominantly in relation to its intrinsic worth, higher education is today seen as an "asset in national competitive strategy" (Robertson, 1995, p. 288), the importance of investment in a well-educated workforce being widely accepted.

Whilst Robbins envisaged the continuing expansion of HE, this was within the framework of highly restricted access which had traditionally obtained. But expansion between 1963 and 1995 has by far exceeded the relatively modest expectations of the Robbins Committee: in 1962 the total number of students in the higher education system was 216,000 (Halsey, 1992); by 1995 it had risen to 1,567,313 (Higher Education Statistics Agency, 1995). The resultant democratisation of higher education has brought a far less homogeneous population across the sector, but most noticeably within the new universities where the traditional 18 year old full-time student no longer typifies the undergraduate student body which now includes both mature and part-time students. (For example 6,336 out of 19,025 undergraduate students at the University of Wolverhampton in 1994/5 were studying on a part-time basis, University of Wolverhampton, 1995).

A corollary of the shift from an élite to a mass system and the concomitant emphasis on higher education as an economic investment for both the individual and the state, is a fundamental change in the processes of teaching, learning and assessment. Trow (1992) suggests that a number of features: modularisation; semesterisation; credit accumulation; credit transfer; franchising; the accreditation of work-based learning; and the accreditation of prior learning have been implemented in order to facilitate this shift, indeed the introduction of such mechanisms under the umbrella term of the 'credit framework' serve to shape the learning environment in which teaching and learning
take place. Within the context of the University of Wolverhampton, and more specifically of the research in this study, modularisation and semesterisation are seen as the most influential feature of the 'credit framework' because together they create the vehicle for teaching and learning: namely a module comprising 45 hours contact time and 105 directed time over a discrete 15 week period known as a semester. The constraints which this modular structure presents will be considered in further detail throughout this thesis, together with the challenges of designing learning experiences in which two thirds of the total time is spent outside the teaching context.

It was against this background that a report on the experiences of implications of National Vocational Qualifications (NVQs) for the polytechnic sector was published (Marks, 1991). The report suggested that NVQs were poised to have an impact on mass HE and that institutions which received students through the vocational route, (principally Business and Technician Education Council (BTEC) qualifications) should consider, inter alia, how the outcomes of learning in HE might be specified in the future. The following year Otter (1992) reported on a project funded by the Department of Employment in nine institutions of higher education "to examine the feasibility of describing a degree in terms of its outcomes" (p. i) in English, engineering, environmental science and social science. Based on the findings of these reports, and cognisant of the shift towards an outcome-led approach across sectors, in September 1992 The University of Wolverhampton, (not part of Otter's original project) set up a core group from seven of the University's ten schools each to rewrite seven modules in learning outcomes and to produce guidelines for the (re) writing of modules in outcome form which would replace the existing content-focused system across the University. The justification for the project was set out in the 1992/3 University's strategic plan namely:

* to achieve clarity of the knowledge, theory and skills to be developed in a given module;
* to facilitate better planning and awareness of what can be achieved and therefore the achievement of specifications of module prerequisiting;
* to demystify the processes of assessment for students by articulating clear goals;
* to facilitate claims for credit from learning;
* to develop a basis to link in with higher level NVQs;
* to facilitate monitoring of the quality of learning.

Two key issues arose from the learning outcome project in the core group for which the author represented the School of Education. Firstly, the project, from its inception and therefore prior to any formulation of a model of design or evaluation of its implementation, was assumed to be worthy of continuation and application across the University; and secondly, that there had been no suggestion in any of the reports or documentation that an outcome-led model might serve to enhance a student's learning experience. Otter's project (1992) had not sought educational grounds for the justification of an outcome-led model, but had focused on the extent to which describing learning in terms of the expected outcomes facilitates the fulfilment of accountability demands from the various stakeholders in education:

the principal benefit in an outcomes led approach lies, therefore, in providing a focus for staff, students and employers to examine more clearly what they are seeking to achieve, and in enabling them to contribute actively to the development of a common understanding of the nature and purpose of higher education and of specific programmes and awards (p. 79).

She also proposed a 'quality cycle' which embodied a continual process of review and improvement beginning with the difficult process of describing outcome statements, moving to linking outcomes with assessment, then to a process of shaping "a potentially fragmented list of outcomes, of varying sizes and kinds, into a coherent model of the award" (p.94), and finally to the process of credit rating which seeks to relate outcomes to the Council for National Academic Award's (CNAA) Credit Accumulation and Transfer (CAT) credit scheme, thus paving the way for the clarification of the relationship between CAT levels and NVQs. Robertson (1994) refers to the coherent "multi-dimensional relationship between credits, modules and learning outcomes" (p.134) by which he means that "learning outcome statements help to define what is to be assessed; modules can be defined as collections of learning outcomes which are to be delivered; and credits are the means by which the equivalence of modules is established" (p. 134). This model which
has emerged from Otter’s work, has led to a definition of a module which transcends its administrative function to being seen as representing the learning experience which addresses an academically coherent cluster of learning outcomes.

Those Universities which have used Otter’s model as a basis for a quality assurance measure of the relationship between learning process and learning outcomes - Liverpool John Moores University, the University of Huddersfield and the University of Wolverhampton (Robertson, 1994) - have, according to Robertson, found the writing of outcome statements a very difficult process. The emphasis of staff development has thus been predominantly on the writing of learning outcomes, and to a lesser extent on addressing issues relating to their assessment. As a direct result, the discourse surrounding learning outcome-led design in HE has been confined to outcome statements, assessment and accountability. Whilst the formative influence of the work of Otter is acknowledged throughout this thesis and specifically in 2.1.2, the study is not directly concerned with constructs relating to the administrative benefits of learning outcome-led design; rather it seeks an educational rationale for the implementation of this radical model. As such the research is firmly located both within a context of teaching and learning in HE and within a theoretical framework of curriculum design.

Early work on this study led the researcher to define the notion of learning outcomes in HE and to develop assessment tasks and criteria which were appropriate tools for recognising and accrediting achievement - much on the lines of Otter’s work. From this investigation a number of issues began to arise notably: which skills might be developed through the learning outcome-led model, not just in education studies, a subject within the University’s Modular Degree and Diploma Scheme, but across the University’s portfolio; how might these skills be assessed; to what extent are transferable skills 'transferable'; how might transferable skills, the outcome-led model, and Records of Achievement (RoAs) be synchronised and integrated across subjects; to what extent might generic academic outcomes be generic across subjects and how might they contribute to defining what characterises the three CATs levels of undergraduate study. Many of
these avenues of enquiry have been, (and continue to be) pursued alongside the work of the thesis, and indeed have shaped the original model of outcome-led design (see 2.3.2). But notwithstanding their salience in current developments in teaching and learning in HE, the researcher continued to return to the key question of the extent to which learning outcome-led design might be justifiable on educational grounds.

A study of the work of Paul Ramsden (1984, 1987, 1988, 1992) on a relational view of learning (see 2.4.5) and particularly his belief that the teaching and learning process should be conceptualised holistically (1987) led to the recognition that the outcome-led curriculum design model (see 2.3.2) embodied the very principle espoused by Ramsden. Following the logic of Ramsden's theory, learning is seen as being about the inter-relationship between the process of learning and the subject matter; about the way in which a student perceives learning in a given context (see 2.4.2 and 2.4.3); improving learning is therefore about changing the way in which a student perceives learning. The theoretical stance based on the seminal work by Marton and Säljö (1976) Säljö (1979) and Marton et al (1992) on students' conceptions of learning and the influence these have on the way in which learning is undertaken and ultimately what is achieved (see 2.4) underpin both the relational view of learning and the outcome-led model posited in the thesis.

Based on a relational view of learning, the focus of this study became the extent to which the learning outcome-led model has the potential to influence how students perceive learning. The initial research was undertaken by comparing students' and lecturers' perceptions of learning in modules which were designed and delivered in outcome form rather than in the traditional design model. The latter is deemed to be a model in which teacher input is emphasised in terms of the content and the sessions; in which the assessment tasks and criteria lack the specificity of the outcome-led model and are not necessarily congruent with either the taught sessions or the stated objectives; in which the expected outcomes of learning are not articulated beyond subject-related learning and without the clarity of the outcome model; and in which there is no attempt to guide student learning in directed
time beyond the statement of a bibliography relating to the content of the taught sessions.

Inextricably linked to this, and still firmly within the domain of curriculum design, the second phase of the research seeks to identify the design factors which influence how students perceive learning and to relate these features back to the outcome model. The two-pronged thrust of the research issue is thus about (i) the potential of the outcome-led model to change how students perceive learning and (ii) the design features which influence how students perceive learning in a modular context. The specific research questions are:

1. To what extent were students aware that they were studying a learning outcome-led module?

2. To what extent were students aware that there were different types of learning outcomes in their modules?

3. What are students' conceptions of learning in the learning outcome and traditional designed modules?

4. To what extent do students have a more qualitative conception of learning when studying learning outcome as opposed to traditional modules?

5. To what extent is there congruence between students' and lecturers' perceptions of what learning involves in learning outcome and in traditionally designed modules?

6. What are the curriculum design features influencing students' perceptions of learning on the traditional and outcome-led modules?

7. What evidence is there that the design features identified through the factor analysis influence students' perceptions of learning?
Chapter 2
Learning Outcomes in Higher Education:
Theoretical Perspectives

The widening access to higher education and the demand for the inclusion of vocationally relevant skills and knowledge outlined in Chapter 1 have led to changes in teaching and learning which are challenging the very epistemic framework of the HE curriculum. Whereas formerly academics were the sole arbiters of what counted as knowledge and as knowing, the state, industry, professional bodies and students now see themselves as stakeholders in the sector (see page 54), each with a right to influence this cornerstone of the curriculum. As far back as 1963, Robbins defined the aims of education inter alia as instruction in skills suitable to play a part in the division of labour, more recently a number of White Papers (Working Together, 1986; Higher Education: Meeting the Challenge, 1987; and Higher Education: A New Framework, 1991) have sought to articulate and promote the desirability of vocational relevance in the HE curriculum. Robertson (1995) suggests that mass participation is leading to mass graduation and if mass employment is to ensue then there needs to be a closer link between academic programmes and employment opportunities, an idea reiterated in a report by the Association of Graduate Recruiters which suggests:

[We] strongly encourage the growth of employment-friendly, cultures in higher education: better integration, more cooperation and mutual understanding (AGR, 1993, p. ii).

Barnett, (1994) suggests that the curriculum of the modern university is changing both to reflect and inform the society of which it is a part, and that 'knowing-how' is becoming as much a part of contemporary epistemology as 'knowing-that' and that as a consequence:

knowing acquires an operational character in which the historical mission of the university to sustain and pass on the virtues of universal knowledge is surrendered. Knowledge to tackle the here-and now problems, as identified by the wider society, becomes the knowledge function of the modern university (p. 48).
Whilst a curriculum is more than an underpinning statement of what counts as knowledge, exactly what the concept does entail is open to interpretation, as Becher and Maclure (1978) suggest:

to ask 'what is the curriculum' is not simply to imitate the pedantic judge who displays apparent judicial ignorance in order to force counsel to define something everyone knows. The answer which is given stakes the territory to which the curriculum developer lays claim (p.11).

Within this thesis the notion of 'curriculum' encompasses the interplay between the learner, his/her learning experience and the epistemic framework. The latter is defined through the assessment régime and the learning outcomes, the learning experience is deemed to comprise the taught sessions and the learner-managed action contingent upon both the learners' perception of the epistemic framework and their experience of the taught sessions. The redefinition of what counts as knowledge is embodied in the specification of learning outcomes which are incorporated into an innovative model of curriculum design which is central to this thesis.

This chapter will seek to contextualise this outcome-led design model within current curriculum theory by considering the following:
2.1 learning outcomes and objectives;
2.2 the place of outcome-led design within curriculum models;
2.3 the learning outcomes approach and models;
2.4 research into learning which underpins the outcome-led design model;
2.5 models of learning in context;
2.6 current research into student learning and its implications for curriculum design

2.1 Learning Outcomes and Objectives

The design of learning experiences in higher education is becoming increasingly outcome-led, but there is confusion regarding what constitutes these outcomes, disquiet amongst academics concerning their ostensible association with behaviourism, and apprehension concerning their implementation. This section traces the evolution of learning

1 This section is based on Allan (1996)
outcomes through work originating in the USA on rational curriculum planning to the development of expressive outcomes, and suggests a definition of learning outcomes pertinent to HE which includes subject-based, personal transferable skills and generic academic outcomes.

It is a bitter irony that the literature of curricula design is replete with equivocation and obfuscation regarding the definition of educational intention. Yet this is by no means a recent phenomenon: Popham in 1969 (p. 35) stated that objectives, goals, intents, aims and outcomes are perceived, by some, as being interchangeable; and Cohen and Manion, (1977, p. 28) asserted that aims, goals, tasks, objectives and learning outcomes are “used freely and apparently indiscriminately.” This dilemma arises from the liberal use of a number of labels to connote statements of purpose which operate at different levels of specificity, with the result that the literature of educational intention has become, “a minefield of terminological confusion” (Rowntree, 1982 p. 31).

The current discussion concerning what might be understood by the term ‘learning outcomes’ has re-opened the debate regarding the concepts of intention and the terminology used to describe them. The focus is on the extent to which outcomes are synonymous with, or subsume, the notion of objectives. But the concept of an objective is itself multi-faceted, lacking a single definition which is universally accepted. The meanings and connotations underpinning the term ‘objective’ therefore require clarification in order to establish what might be currently understood by the term and the extent to which this is implicit in the way in which ‘learning outcomes’ is being used in higher education today.

2.1.1 Objectives

Function

The specification of objectives is perceived as the starting point in designing curricula using ‘rational planning models’, so-called on the grounds that it is rational to prespecify the goals of an activity prior to engaging in it. Tyler (1949), the first major proponent of this form of planning explained the importance of objectives thus:
if an educational programme is to be planned and if
efforts for continued improvement are to be made, it is
very necessary to have some conception of the goals that
are being aimed at. These educational objectives become
the criteria by which materials are selected, content is
outlined, instructional procedures are developed
and tests and examinations are prepared (p. 3).

**Terminology - Educational Objectives**
Definitions of objectives abound, but they typically express educational
intention. Tyler used the broad descriptor *educational* objectives
which he defined as specifying "the kinds of changes in behaviour that
an educational institution seeks to bring about in its students" (1949, p.
6). At this time *behaviour* was not used by Tyler in a narrow specific
sense as in the adjective 'behaviouristic', but rather, "to include thinking
and feelings as well as overt action" (1949, p. 6). Indeed he ostensibly
viewed objectives as "general modes of reaction to be developed, rather
than highly specific habits to be acquired" (1949, p. 37). But there exists
a tension in his work between this broad notion of an educational
objective, and the specific objectives which he considered to be
pertinent to the process of curricula design. In practice, Tyler
emphasised the specification of narrow objectives which could be seen
to derive from a given learning experience to the exclusion of broader
educational outcomes which might develop from the wider process of
education. He stated that when planning, "only those objectives which
might result from learning and which are educationally obtainable
should be included" (1949, p. 37). In stating that the objectives must be
"educationally obtainable" there is also an assumption that there is an
achievable, tangible and therefore observable product of learning
which is capable of being specified in advance.

Working from this premise, Tyler also rejected the definition of
objectives as topics, content, and concepts that are to be dealt with in a
course because they fail to indicate what the students are expected to do
with the content, and therefore do not specify what is supposed to ensue
from the learning experience. Similarly he found unacceptable the idea
that objectives may be written in the form of generalised patterns of
behaviour for example, to develop critical thinking, because, whilst they do relate to desired changes in behaviour, they are vague and fail
to stipulate the specific context and curricula component to which this behaviour applies. He thus concluded that the most useful form of expressing objectives is in "terms which identify both the kind of behaviour to be developed in the student and the content or area of life in which this behaviour is to operate" (1949, p. 46-47). An example of such an objective is "to write clear and well-organised reports of social studies projects" (Tyler, 1949, p.47), this includes an indication of the kind of behaviour expected - writing clear and well-organised reports - and also states the area with which the reports are to deal.

Tyler's definition of objectives can be seen to place the responsibility on the institution to identify the desired behaviour to be developed in the student. In so doing his model clearly emphasised the pivotal role of the educator and the importance of specifying contextualised observable behaviours when designing curricula. But whilst his term educational objectives acknowledges the role of the former, the precise definition of learning objectives which emerged from his work, rendered the use of the term educational, which connotes the broad holistic development of an individual, somewhat incongruous given the level of specificity of learning objective demanded by his work. The gap between Tyler's aim of developing 'general modes of reaction' and the reality of the precision of his objectives reduces the term educational objectives to rhetoric.

Instructional Objectives
This inconsistency was removed by the shift from the use of the term educational to instructional objective which was embodied in Mager's seminal work in 1962 (see Figure 2.1). The modification of language represented by the change of descriptor, suggests a movement along a continuum from the more general to the specific, but not an ideological shift. By replacing 'educational' with 'instructional', the link between the achievement of prespecified objectives as a direct result of the instruction which a student receives is emphasised. Mager's model specifies that objectives should fulfil three criteria (see Figure 2.1). First, the language used to describe the performance of objectives should be tightened up so as to preclude ambiguity and to refer to observable student actions. Mager (1962, p. 20) suggests that "there are
Figure 2.1 Significant Stages in the Specification of Objectives

1949  
*Educational Objectives (Tyler)*  
An objective represents "the kinds of changes in behaviour that an educational institution seeks to bring about in its students" (p. 6). Objectives should include:  
1. behaviour aspect;  
2. content aspect.

1962  
*Instructional Objectives (Mager, p. 21)*  
An objectives states what a "learner will be able to do" after the learning experience that he could not do before. Objectives:  
i. should be unambiguous composed of verbs that describe the performance, the observable actions that the learner is expected to do;  
ii. have the important conditions under which the performance is to occur clearly stated;  
iii. indicate the "criterion of acceptable performance by describing how well the learner must perform in order to be considered acceptable."

1969  
*Instructional Objectives (Popham et al)*  
According to *Eisner*, Consensus exists between Mager, Tyler, Gagné, Bobbitt, and Bloom that Instructional Objectives:  
i. should describe student behaviour, not teacher behaviour;  
ii. should describe "both the behaviour to be displayed and the content in which the behaviour is to occur"; i.e. conditions  
iii. should be stated at a "level of specificity that makes it possible to recognise the behaviour should it be displayed" ( pp. 1-2).

1973  
*Behavioural Objectives (MacDonald Ross,)*  
An objective states "what the student will be able to do after the learning experience (that he could not do before)" (p.4). Objectives:  
i. (somehow) relate properly to the general educational aims;  
ii. are brought to the appropriate level of detail by specifying the conditions relevant to performance;  
iii. include an indication of a standard of performance.

1977  
*Behavioural and Non-Behavioural Objectives (Cohen & Manion)*  
Objectives are "formulations of educational intent" (p.32)  
behaloural objectives: identify, "the learner's overt achievements" (p.33)  
non-behaloural objectives indicate: what the teacher plans to do;  
i.e. teaching objectives  
or  
the elements of the content;  
or  
behaviour in abstract terms (p. 34).

(Allan, 1996, p. 106)
many slippery words that are open to a wide range of interpretation”, words like: to know; to understand; to really understand; to appreciate; and to grasp the significance of, and that these “broad terms or ‘fuzzies” (Mager, 1962, p. 20) should be replaced by words which are not open to misinterpretation like: to write; to recite; to identify; to sort; to solve; to construct; and to compare. Second the conditions under which the performance is to take place, should be stated unequivocally; and third the criterion “the quality or level of performance that will be considered acceptable” (1962, p. 23) in each discrete objective should be clearly stated. Mager gives an example of such an instructional objective as to:

be able to write a musical composition with a single tonal base within four hours. The composition must be at least sixteen bars long and must contain at least twenty-four notes. You must apply at least three rules of good composition in the development of your score (1962, p. 36).

As can be appreciated from this example of an objective, the approach involved the breaking up of complex tasks into highly discrete and defined elements and the measurement of each in order to see if the required criterion, or standard, had been achieved. By emphasising assessment through the use of standards, the scope of feasible objectives is necessarily limited to those which are capable of being measured quantitatively.

The position advocated by Mager demanded a more systematic and mechanised approach to curriculum design than the relatively liberal and less specific stance espoused by Tyler. Mager’s definition represented the views of individuals in the USA, trained not in curriculum, but in psychology, who dominated the development of curriculum planning and the design of materials in the 1960s. This was very much the decade of the educational scientist and technologist in which the positivist paradigm heavily influenced educational initiatives emphasising control, measurement and the desire to produce teacher-proof materials. The work of Popham, a leading proponent of the movement, is symptomatic of this thrust. Focusing on technical design, he set up the Instructional Objectives Exchange in Los Angeles where
objectives could be purchased by those who could not write them themselves.

Whilst Mager’s construct is characterised by the clarity of definition it brought to the specification of objectives, it is equally notable for the emphasis it placed on objectives being used to describe what the learner is able to do at the end of a course of instruction, rather than specify what instruction might constitute in terms of content or what the intentions of the teacher might be. Ironically his descriptor _instructional_ seems to emphasise the role of the teacher and the course, yet in his work, Mager differentiates clearly between course description, and an objective. The former is concerned with what the course is about, with what the teacher intends to do, with what will later be termed ‘teaching objectives’, whilst the latter is confined to the achievements of a successful learner on completion of the course. By specifying that an objective describes what a student achieves, Mager brought the learner more into the framework of curriculum design as a participant in the process of education. He maintained that by making it clear to students what the results of their learning should be, they are provided “with the means to organise their own efforts towards the accomplishment of those objectives” (1962, p. 6). Thus, in spite of what the descriptors might suggest, it was Tyler’s model, and not Mager’s, which had stressed the role of the institution and the role of instruction in bringing about changes in behaviour. Mager’s belief in the role of the student in the achievement of objectives suggests that the use of the term _instructional_ to describe educational achievements for the learner is equally inappropriate as the use of the broad descriptor ‘educational objectives’ had been for Tyler!

**Behavioural Objectives**

A further shift in the terminology to the use of the term _behavioural_ objectives (see Figure 2.1) served to clarify the relationship between the learner and the teacher, between instruction and learning, which had not been explored by Mager, yet which remained at the heart of rational planning. The term ‘behavioural’ emphasises that the changes in student behaviour, the objectives which are measured and celebrated, are those which result directly from the interaction of learner and teacher, from the learning experience. Eisner, (1979) suggests that these behavioural
objectives are achieved through a distinct curricular emphasis, through drill and practice, which result in the reliable performance of a given task rather than being brought about as an indirect consequence of curriculum activities. Learning can take place without teacher/learner interaction, but curriculum design based on behavioural objectives, in the manner described by Macdonald-Ross (1973), precludes the acknowledgement and recognition of any outcomes which might accrue, either from a learning experience initiated by a student independent of a teacher, or, unintentionally, from a teacher/learner interaction which has been constructed specifically to achieve a given purpose.

Thus the use of behavioural objectives considerable narrows the scope of the learning outcomes which are legitimised in curricula designed with their use. Eisner (1979, p.105) suggests that the adoption of the adjective behavioural to replace instructional (see Figure 2.1) was not by accident, but "reflects an increased emphasis on the behaviour of the student and on discrete forms of student activity". The term 'behaviour' had not featured in the definition of objectives given by Mager (1962, see Figure 2.1), he chose instead the adjective instructional rather than behavioural as a descriptor. He considered that the term 'behaviour' put people off because it made them believe that the objectives necessarily had something to do with behaviourism or with behaviourists. This he rejected saying that "objectives describe performance, or behaviour, because an objective is specific rather than broad or general and because performance, or behaviour, is what we can be specific about" (Mager, 1962, p. 23). Mager thus equates the terms performance and behaviour, but eschews the latter. It might be inferred that the change in nomenclature reflected a change in the perceived character of objectives, but actually the necessary elements of behavioural objectives as summarised by MacDonald-Ross (see Figure 2.1) were exactly those defined by Mager in 1962, that is, that they are unambiguous, specific statements of student behaviour which include the conditions under which the behaviour will occur and the standard (criterion) of performance which is acceptable. The term 'behavioural' emphasises what counts as a legitimate outcome of learning, and simultaneously reaffirms that these outcomes should be expressed in a very tightly specified statement of observable action. Macdonald-Ross's
definition is more prescriptive than Eisner’s 1969 summary (see Figure 2.1) of the stance of the leading positivist curriculum writers, (Tyler, Gagné, Bobbitt and Bloom), which did not include a standard of expected behaviour, proposed by Mager in 1962. However it still serves as the model definition which continues to inform rational planning - curriculum planning using the ‘objectives model’.

The phasing out of the term instructional objectives in favour of behavioural objectives with its attendant specificity and its behaviouristic overtones, effected a polarisation of reaction to the notion of an educational objective. At one extreme rational planning was rejected and labelled as reductionist by those who did not accept that a subject can be reduced to disjointed facts and concepts if the integrity of a discipline is to be respected, this ‘atomisation’ was, and remains, an anathema particularly to those involved in curriculum design in higher education, where a high level of analysis and synthesis is implicit in what constitutes learning in undergraduate study. Yet at the other extreme, the tenets of behaviourism underpin the more recent planning models of Wheeler (1967), Kerr (1968), Taylor (1970), and Merrit (1972).

*Non-Behavioural Objectives*

Paradoxically, the predominance of behavioural objectives served to stimulate a reaction to the narrow strait-jacket that they imposed upon curriculum designers. This took the form of the re-emergence of non-behavioural objectives for example: understanding concepts; appreciating art forms; and developing critical thinking, which cannot be expressed in behavioural terms and which are not readily assessable. Writing in 1949, Tyler had acknowledged the existence of such objectives in the form of generalised patterns of behaviour, but had eschewed them as unhelpful in designing curricula both because they are couched in vague and imprecise language and because they do not to stipulate the content to which the objective relates. Such non-specific objectives also fail to meet Mager’s criteria for assessment (1962, see Figure 2.1) - reiterated by MacDonald-Ross (1973) - that there must be an indication of the conditions and standard of students’ expected performance associated with each objective.
Teaching Objectives
Whilst early curriculum literature gives non-behavioural objectives somewhat superficial treatment, Cohen and Manion (1977) posit a model which attempts to differentiate between non-behavioural and behavioural objectives. The latter identify "the learner's overt achievement" (p.33) for example the "pupils will list and identify six figures of speech" whilst the former are either less precise patterns of behaviour, for example, the class will be able to "detail the images which conjure up a landscape of winter and death" (p. 32) or an element of curricula content or what the teacher, rather than the learner, plans to do, for example "To further the class's understanding of Hardy's 'The Darkling Thrush'" (p.32) (see Figure 2.1). Cohen and Manion's sole criterion for assigning the adjective 'non-behavioural' was that the objective so described did not specify the precise terminal behaviour by means of which an assessment could be made regarding what has been achieved, whilst the word 'objective' itself was by them used to describe both the intentions of a teacher, and the achievement of learners. This represents a significant departure from the tight definition of an objective relating solely to student achievement (see Figure 2.1) which had been proposed by Mager.

The suggestion that objectives might prescribe teacher activity had hitherto been rejected by curriculum writers notably Tyler (1949), Mager (1962), Eisner (Popham et al, 1969) Bloom, Gagné, Bobbitt and (Bloom et al, 1956). Tyler (1949, p.44) had acknowledged the possibility of both teaching and learning objectives, but eschewed the former which he referred to as "things which the instructor is to do", because he believed that "any statement of the objectives of the school should be a statement of changes to take place in students." Similarly Popham (Popham et al, 1969) acknowledged the difference between:

what a teacher, for example, wants to have happen to the kids and what a teacher decides to do in order to have it happen. Now in the first case you have intents regarding the behavioural changes that will occur in learners. In the second you have procedures that you're selecting for which you have some hunch that consequences will emerge (p.22).

But he went on to say that, "if we start to call these [teacher] activities
‘objectives’, then considerable confusion emerges.” This was a truly prophetic statement; the relatively clear waters of educational intention have certainly been muddied by the acceptance that objectives may specify what a successful learner will achieve, and what teachers intend to do or what teachers intend that learners will do. The resultant ambiguity has led to the use of the term ‘teaching objective’ to describe teacher intent, for example ‘to introduce students to the principles of education research’ and ‘learning objective’ to describe what a student should be able to do after the learning experience that he/she could not do before (Mager, 1962 see Figure 2.1).

Expressive Objectives
Perhaps more significantly, Cohen and Manion’s model (1977) suggests that curricula might be planned in somewhat less stringent terms than is required when specifying behavioural objectives. The requisite of precise observable objectives in rational curriculum design precludes the planning of learning experiences for which the outcome cannot be pre-stated at a level of specificity capable of being translated into clear-cut behaviours which are capable of being measured and assigned with an indication of what constitutes an acceptable standard of performance in a given context. The reductionist thinking which results from such a prescriptive approach imposes a straitjacket on curriculum planning; this is the major source of criticism of behavioural objectives and has received widespread documentation (Stenhouse, 1975, Eisner, 1979, Kelly, 1989, Taylor and Richards, 1987, Marsh, 1992). Eisner, for example, argued forcibly that, “one should not feel compelled to abandon educational aims that cannot be reduced to measurable forms of predictable behaviour” (1979, p. 98). He maintained that there is a place for expressive objectives, which he describes as “the outcome of an encounter or learning activity which is planned to provide the student with an opportunity to personalise learning” (Popham et al, 1969, p. 130). Eisner later named these less specific and more individualised objectives “expressive outcomes” (see Figure 2.2).

2.1.2 Learning Outcomes
Terminology
In adopting the term outcome in place of objective, Eisner differentiated between the latter, which imply a preformulated specific
Figure 2.2 Significant Stages in the Specification of Learning Outcomes

1969

*Expressive objectives (Eisner)*

are "the outcome of an encounter or learning activity which is planned to provide the student with an opportunity to personalise learning."

(Popham et al, 1969, p.130)

1979

*Eisner*

Distinguished between 3 kinds of 'objectives':

i. behavioural objectives;
ii. problem-solving objectives;
iii. expressive outcomes which relate to personal purpose and experience.

"outcomes are essentially what one ends up with, intended or not, after some form of engagement" (p. 103)

1979

*Eisner Trichotomy of Outcomes:*

*Student outcomes* involve what the student has learned that has not been taught- goes beyond classroom instruction. Personalised learning, learning from intellectual interaction, learning stimulated by the course which might only be tangentially related.

*Subject-specific outcomes* are directly related to the content that is taught these can be, but are not necessarily, related to the course objectives.

*Teacher-specific outcomes*

intellectual style, standards, values.

1989, 1992

Unit for the Development of Adult Continuing Education (*UDACE*)

*Learning outcomes* are "what a learner knows, or can do, as a result of learning."(Otter, 1992, p.1)

More specifically these are:

"subject-based outcomes, knowledge, comprehension, the ability to apply knowledge in different situations and the processing skills acquired through the use and application of knowledge;

*personal outcomes* including interpersonal skills like team work an

1994

*Allan*

*Learning outcomes in Higher Education* encompass:

*subject-based outcomes* which subsume learning objectives and which are complex discipline-based outcomes which are capable of being assessed.

*personal transferable outcomes*; including acting independently; working with others; using Information technology, gathering information; communicating effectively; organisational skills.

*generic academic outcomes.*

making use of information; thinking critically; analysing; synthesising ideas and information.

(Allan, 1996, pp. 106-107)
goal and the former which, "are essentially what one ends up with, intended or not, after some form of engagement" (1979, p. 103). Otter's definition of learning outcomes as "what a learner knows or can do as a result of learning" (1992, p. 1) affirms Eisner's perception of outcomes as being what the student achieves as opposed to what the teacher intends to teach. Outcomes, in Eisner's terms, are broad overarching consequences of learning which do not meet the stringent criteria which necessarily apply to behavioural objectives, where the latter are unambiguous, specific statements of expected behaviour which include the conditions under which the behaviour will occur and the standard of performance which are acceptable (see Figure 2.1). This is not to suggest that the use of outcomes in planning curricula precludes a statement of intention regarding what one will end up with, but rather that "the precise dimensions of the outcomes cannot be specified to the level of clarity or specificity that instructional objectives ought to have" (Eisner, in Popham et al, 1969, p.23). Eisner suggests that the inability to write with such precision derives from both the nature of the subject matter and the teacher's conception of education, thus whilst some subjects may be perceived as being 'by nature instructionally objective' - i.e. capable of being reduced to specific elements - and education as shaping behaviour, other subjects are perceived as irreducible educational encounters in which education is conceived as "an emergent process guided through art" (p. 9).

**Learning objectives**
In teasing out just what the essence of outcomes (as opposed to objectives) might be, Eisner's work (1979) offers an apposite framework (see Figure 2.2). He suggests that the outcomes of a learning experience includes subject-specific, student and teacher-specific outcomes, the notion of subject-specific outcomes in Allan's model (1995) derive directly from the work of Eisner (Figure 2.3).

Subject-specific outcomes relate directly to, and result from, the content that is taught in a given context. An example of a such an outcome taken from a second year undergraduate research methods module in education studies - ED2280 entitled Research Methods in Education and the Social Sciences - is "that on completion of the module the student will be able to apply knowledge of validity, reliability and
triangulation to a chosen research issue”. This provides a clear statement of what the student will be able to do as a result of the learning experience which has been planned. In this respect the outcome might be said to resemble an objective as defined by Tyler and Mager. It does, however, differ from both an instructional and behavioural objective in four important ways. First the outcome is not expected to be achieved solely as a result of the student/teacher interaction within the teaching context for the learning experience is deemed to encompasses the activity undertaken independently by the student outside of the classroom; second, the outcome is not expressed in the form of one precise discrete element because the student is expected to both have knowledge of validity, reliability and triangulation and to apply this to an issue which he/she has chosen. The outcome is thus far more complex than an instructional or behavioural objective. This complexity derives as much from the nature of research methodology of which a necessary element is the ability to apply constructs to practice, as from the level of study which precludes the atomising of knowledge. Third there is no precise statement of the specific ‘area or content of life’ (Tyler, 1949, pp. 46 - 47) or the ‘conditions under which the performance is to occur’ (Mager, 1962, p. 21) or the ‘conditions relevant to the performance’ (Macdonald-Ross, 1973). The student is free to apply the required knowledge to a research issue of his/her choice. This results in the outcome which is actually achieved by a given cohort differing in detail from one student to another and precludes the homogeneity of response which is a necessary condition of behaviourism. Finally there is no standard of performance which is explicitly expressed in each subject-specific outcome (compare this with the example of an objective already given from Mager “be able to write a musical composition with a single tonal base within four hours. The composition must be at least sixteen bars long and must contain at least twenty-four notes. You must apply at least three rules of good composition in the development of your score” 1962, p. 36). Whilst each subject-specific outcome is accompanied with an explicit statement of the assessment task by which it will be assessed and the criteria by which the outcome will be graded, this does not imply that each outcome is to be assessed discretely; the outcomes are ‘bundled’ into a composite assessment task. This grouping of subject-specific outcomes into ‘bundles’ represents a significant departure from the assessment of
objectives as advocated by Mager (1962) who demanded that the standard of performance should be explicitly stated and assessed separately for each objective.

This is explained by reference to the following five outcomes which are ‘bundled’ into a single assessment task in the research methods module already referred to above.

*Subject-specific outcomes:*
On completion of the module participants will be able to:

i. make a clear statement of a research issue and appropriate research questions;

ii. select and justify a research approach, appropriate for a specific research issue;

iii. select and justify an appropriate methodology and data collection instruments for a specific research issue;

iv. identify the major sources of literature relevant to a given research issue;

v. apply knowledge of validity, reliability and triangulation to a chosen research issue.

[Assessment of outcomes i-v will be by a written assignment Students will be assessed according to given criteria]

Outcome (i) might be considered to be the key outcome because it is necessarily linked to each of the other four outcomes and provides a focal point for the assessment task. In addition outcome (ii) and outcome (iii) are linked whilst outcome (ii) and outcome (v), and outcome (iii) and outcome (v) are interdependent. The lecturer's perception of the conceptual scheme implicit in the module content has thus been clarified for the student through the statement of the learning outcomes, and the 'intellectual challenge' of the module has not been compromised by the reduction of the module outcomes to discrete elements. The process of 'bundling' is essential in the assessment of learning outcomes in higher education where subject matter cannot be reduced to disjointed facts and concepts if the integrity of the subject matter or discipline is to be respected, and if the high level of analysis, and synthesis implicit in learning at this level is to be retained.

This uncoupling of subject-specific outcomes in the outcome-led model from the stricture of behavioural objectives represents a significant
turning point in terms of the potential for the use of outcomes in curriculum design in higher education. Subject-specific outcomes may be very loosely termed 'objectives', but where they are so-called they are increasingly referred to as 'learning objectives' to differentiate them from instructional and behavioural objectives (see Figure 2.3) and from teacher objectives. The use of the term 'subject-specific outcome' to replace 'learning objective' serves both to clarify the meaning of the terminology and to facilitate the shedding of the mantle of behaviourism with which the word 'objective' is associated. But whatever terminology is employed neither is synonymous with learning outcomes for neither represents the totality of the consequences of learning in higher education.

**Personal Outcomes**

The learning outcome model seeks to recognise and celebrate student achievement which both includes and transcends subject-specific objectives. Eisner (1979) in his trichotomy of outcomes (see Figure 2.2), suggested that both student and teacher-specific outcomes are as much about education as are subject-specific outcomes. For Eisner student-specific outcomes constitute what he terms 'personalised learning' that is what the student has learned which has not been directly taught, learning that has occurred in an individual independent of direct teacher/student interaction, and learning which may be only tangentially related to the pre-specified subject-specific outcomes. These outcomes are not wholly predictable, and are, to an extent individualised, being dependent upon the extent to which the student engages in the learning experience and takes responsibility for his/her learning. As Barnett suggests:

> the tutor hopes to set the student off on the right path, and hopes to see the student being successful. Once the contact has been made, the outcome is to a considerable degree unpredictable; the tutor cannot fully control it, for it is the student that is, or is not, successful (1988, p. 248).

The individual characteristics of such outcomes were emphasised in the UDACE (1989, p.3) descriptor of personal outcomes (see Figure 2.2) which subsumes what had been previously labelled by Eisner as student and teacher-specific outcomes (see Figure 2.3).
The use of the term 'personal outcomes' serves to differentiate between subject-specific achievements and the more individualised outcomes of learning associated with what a student can do and knows beyond a
given subject specialism, but it fails to articulate specifically what these personal outcomes might be and consequently its use does not inform the design of curricula. Thus more appropriate descriptors are proposed (see Figure 2.2) namely; personal transferable skills and generic academic outcomes. Both of these forms of outcomes derive from Eisner’s ‘student-outcomes’ (see Figure 2.3), because they may be only tangentially linked to subject-specific outcomes and because they are, to an extent, individualised. They may have been taught directly for example ‘the ability to differentiate between evidence and example’, or indirectly through the actions of a lecturer, for example ‘the development of effective oral communication skills’, or they may have been learned by the student as a consequence of his/her involvement in a learning experience, for example ‘how to take responsibility for one’s own learning.’

Both personal and generic outcomes are perceived as being transferable to a wide range of context and this respect they differ from subject-specific outcomes. The notion of ‘transferability’ is taken from the work carried out by the National Council for Vocational Qualifications (NCVQ) which has advocated the teaching of transferable skills “based on the assumption that the acquisition of the core skills in some areas of competence and contexts offers the potential of generalisation or transfer to other areas and contexts which employ the same skill” (Jessup, 1990, p. 80). Core skills, which generally refer to problem solving, communication skills, numeracy, personal effectiveness and IT skills, are now considered to be an integral element of competency-based curricula such as NVQs and the Management Charter Initiative (MCI) and are instrumental in providing the impetus and framework for the inclusion of non-traditional personal outcomes in higher education curricula. A number of White Papers (Working Together, 1986; Higher Education: Meeting the Challenge, 1987; and Higher Education: A New Framework, 1991), the Confederation of British Industry’s strategic paper Towards a Skills Revolution(1989), and the Trades Union Congress paper Skills 2000 (1992) have all sought to articulate and promote the desirability of a link between HE and employment and thus have advocated the development of such personal skills within the HE curriculum. Yet whilst competency-based education has its origins in teacher education (Burke, 1989; Burke et al,
1975; Elam, 1971) it is still not widely associated with non-vocational undergraduate study in universities, either new or old. The idea of being competent meaning “performing to professional or occupational standards” (Jessup, 1991) smacks of training rather than of education, in its broad sense, and in consequence is eschewed by many academics who are committed to the belief that higher education is of intrinsic, not extrinsic worth, who share the view that “to be educated is not to have arrived at a destination; it is to travel with a different view” (Peters, 1965, p.110) and who fail to recognise that the intrinsic and extrinsic are not mutually exclusive.

The form of learning outcomes proposed for use in higher education does, however, differ from that of competency-based outcomes associated with vocational education. Personal outcomes are divided into ‘personal transferable skills’ and ‘generic academic outcomes’ (see Figure 2.2) The latter connotes a set of qualities which characterise a graduate and which involve, some kind of “balance of knowledge, skills, creative thought and motivation” (Otter, 1992, p. 2). These outcomes are developed through undergraduate study, but are thought to transcend discrete subjects, and typify the cognitive attributes of graduates. (The key academic outcomes which have been identified at the University of Wolverhampton are given in Appendix 1.) The former are akin to NVQ core outcomes and describe those skills which are associated with an individual who has received training and or education at an advanced level. They are not necessarily confined to graduates, but they represent the skills which graduates are deemed to require as part of their portfolio of attributes which will enhance their employability and their personal capability. (The list of the key transferable skills which have been developed at the University of Wolverhampton is given in Appendix 2). Rather than referring to ‘personal transferable skills, the term ‘capability’ is preferred by Stephenson & Weil (1992) and Stephenson (1994) and Higher Education for Capability (HEC) which defines the attribute of capability as a student’s ability to:

(i) take effective and appropriate action, (ii) explain what they are about, (iii) live and work effectively with others and (iv) continue to learn from their experiences, both as individuals and in association with others, in a
diverse and changing society (Stephenson & Weil, 1992, p. 1).

The transferable nature of capability is emphasised by HEC which stresses the importance of students' "application, understanding, integration, autonomy, development, responsibility and collaboration" (Stephenson, 1994). But the characteristic of transferability is not immediately explicit in the descriptor 'capability', hence the expressed preference for 'personal transferable outcomes' (see Figures 2.2 & 2.3) which emphasises the individuality and wide-ranging applicability of this form of outcome rather than the overall potential of an individual which is implicit in the notion of 'capability'.

The development of the trichotomy of outcomes has also evolved from the Unit for the Development of Adult Continuing Education's (UDACE) definition of personal and subject-based outcomes (see Figures 2.2 and 2.3). But UDACE does not differentiate between subject-specific and academic outcomes combining them as "the ability to apply knowledge in different situations and the processing skills acquired through the use and application of knowledge" (UDACE, 1989, p.3). Whilst the lack of emphasis on subject knowledge inherent in this definition might well be appropriate for vocational education, the subject orientation of undergraduate study requires articulation of the specific knowledge, understanding and skills which have been achieved within the context of a given subject. Hence the separation of subject-specific from generic academic outcomes in the model posited in this thesis.

Thus the term 'learning outcome' is used in the model to encompass subject-based outcomes, personal transferable outcomes and generic academic outcomes (see Figures 2.2 & 2.3). It has been suggested that learning objectives, subsumed within the subject-based outcomes, do not represent the totality of the consequences of learning in higher education and that the achievements of students in terms of personal outcomes (see Appendix 1 and 2) should be articulated and celebrated. Whilst potentially contentious, this assumption is both recognised and given credibility by the Higher Education Quality Council (HEQC) guidelines for assessment which differentiate between learning objectives and other forms of outcomes by indicating that a possible
form of enquiry, on inspection, is: “how an institution reassures itself that practices fully cover all declared learning objectives and learning outcomes” (1993).

Notwithstanding the reservations of some academics, outcome-based education is gaining momentum through the Enterprise in Higher Education initiative launched in 1989, sponsored by the Employment Department (ED), and through the current thrust for universities to develop and accredit NVQs at levels 4 and 5. A recent press release from the Committee of Vice Chancellors and Principals (CVCP), confirms the involvement of universities with the ED, the NVCQ and the Scottish Vocational Educational Council (SCOTVEC) in the extension of vocational qualifications “provided that they integrate and develop cognitive, core and subject-specific abilities to levels which are comparable with those already attained in existing HE programmes of vocational education” (CVCP, 1994).

Learning outcomes have evolved both from rational curriculum design (see Figure 2.3) and the work of Eisner. Consistent with the work of Tyler (1949), Mager (1962) MacDonald-Ross (1974) and Eisner (1979) the use of outcomes emphasises student achievement and affirms that curriculum planning should begin with what is learnt rather than what is taught. The dichotomy between learning and teaching intentions is recognised in the outcome-led model indeed the process of defining and expressing learning outcomes is intended to enable lecturers to reflect upon what they want their students to learn and thereby articulate the relationship between what they teach and what students do, in fact, learn.

This presupposes that the learning outcomes are clearly expressed, in a form which enables learners to know, at the commencement of a module, what it is they are expected to achieve in relation to subject content, personal transferable skills and academic outcomes. But this is not tantamount to prespecifying unambiguous statements of predicted behavioural objectives which derive from a given learning experience. This is theoretically unacceptable on three grounds. First there is no intention that outcome statements should seek the unity of response which necessarily characterise behavioural objectives. Secondly there is
no assumption that the outcomes derive uniquely from either the teaching objectives or the taught sessions. This is not to undermine or denigrate the role of the lecturer, but rather to emphasise the role of the student in accepting responsibility for his/her own learning and to acknowledge that learning might take place in a variety of settings. Thirdly there is no explicit expectation that the module must necessarily be completed in order to achieve the outcomes, some of which may be claimed through APEL schemes.

Equally contentious in higher education is the demand for behavioural objectives that indicate explicitly ‘standards of the student’s expected performance’ (see Figure 2.1). The demand for crisp unambiguous objective measurement of learning achievement was heavily criticised by Eisner who bemoaned the “preoccupation with standardised outcomes” (1979, p. 15) which dominated planning in the 1960s and 1970s. Through the assessment procedures which obtain in higher education lecturers make judgments about, for example, their students’ ability to argue cogently, to analyse material and to interpret data. None of these are subject to absolute standards, yet all are assessable against a set of criteria.

Whilst this uncoupling of the assessment of learning outcomes from the notion of a standard of performance is significant, assessment does remain at the core of curricula designed in learning outcome form. The more subject-specific, personal transferable and academic outcomes are clearly expressed, the more the learner is able to concentrate on what they need to know in order to succeed on a given module. This places a greater emphasis on the specification of assessment tasks and the criteria by which judgments will be made thereby forcing both the student and the teacher to examine and articulate the relationship between learning outcomes, assessment and the experience of learning.

Learning outcomes may well subsume a form of learning objective, but the abandonment of the descriptor ‘behavioural’ is absolutely crucial in allowing outcome-led design to shed the mantle of behaviourism which is antithetical to higher education. A concept of learning embracing subject-based, personal transferable and generic academic outcomes is consistent with the attributes which characterise a graduate in the 1990s,
but there are fundamental conceptual differences between outcome-led design and the traditional rational approach to curriculum design and planning.
2.2 The place of outcome-led design within curriculum models

Bobbit (1918) is generally recognised as the earliest proponent of rational curriculum planning, although it is Tyler's (1949) work which remains the seminal text in terms of the explication of the first rational design model also known as a 'means-end' or 'product' model. This form of design dominated curriculum theory until the 1970s when Stenhouse (1975) repudiated the approach on the grounds that it was not conducive to teaching for understanding and development, and because he felt that to be educated was to have developed certain intellectual qualities rather than to have had one's behaviour modified or to have acquired a body of knowledge (this is explored in more detail in 2.3.5).

In proposing his process model of curriculum design (1975), Stenhouse questioned whether curriculum and pedagogy could be organised satisfactorily by a logic other than the means-end model of rational design. He saw the design process as beginning not with behavioural objectives, but by specifying the content of the curriculum and devising materials which are consistent with the principles, content and criteria inherent in the content specified. The model focuses on the curriculum process, the conditions of instruction which are to be created and the nature of the teacher's role; at no point does it seek to specify the product which is it anticipated will be achieved as result of teacher/learner interaction.

A curriculum design model is categorised by the element in teaching and learning which is perceived as the principal component and the starting point for the development of the design; hence the nomenclature of Stenhouse's model as the 'process' model. Whilst models emphasising elements other than the 'product' or the 'process' have developed e.g. experiential learning (Kolb, 1984; Davies, 1990); needs analysis (FEU, 1987) situational analysis (Reynolds and Skilbeck, 1976); and the deliberation process (Walker, 1971), all of these models can be said to derive from either product or process planning (Figure 2.4). It is not surprising therefore that traditionally curriculum design models have been perceived as being located within one pole of a dichotomy. Yet all of these design modules share a single focus; they all are models which are teacher-centred, in other words they all offer designs for teaching. In contrast the emphasis on the outcomes approach is not on teacher-oriented input whether this is in the form of
a tightly controlled learning experience, as in Tyler's model (1949), or
the control of content, as in Stenhouse's (1975) model, or the analysis of
need, as in the FEU's (1987) model, or indeed an analysis of the
situation in which learning will take place, as in Skilbeck's (1976) and
Erut's (1990) models, but on the process of learning. Outcome-led
design is thus a design for learning.

Now it might be argued that outcome-led design draws on the product
model (Figure 2.3) through its specification of expected achievements,
but it has already been suggested that it does not follow logically from
this that the outcomes approach is behaviourist, a point given weight to
suggests:

the model of outcomes is clearly not behaviourist either
in intention or formulation: his outcomes model is
directed to liberating and empowering the individual
rather than controlling or merely modifying behaviour
(p. 67).

It might also be argued that the approach draws on the process tradition
through its development of personal transferable skills (Figure 2.3), the
lack of prescription of how teaching should take place and the emphasis
on learning. Stenhouse (1975, p. 24) asserts that "teaching is not merely
instruction, but the systematic promotion of learning by whatever
means", but Stenhouse's model remains a teacher-centric model, the
starting point for the development of the curriculum is what
the teacher believes to be appropriate in terms of content whereas in
the outcomes approach the starting point is not focused on the
teaching process but the outcomes which the learner will achieve, the
focal point of the experience of learning is not the teacher but the learner. As Burke (1995) suggests when discussing the NVQ/GNVQ
learning outcome model:

in the Jessup model, it is the learner who is central.
Indeed, in this model the teacher is another (if
important) resource, where available. This is not an
argument that the teacher is an 'optional extra' but that
the model embraces modes of learning and instances of
curriculum, where the teacher is absent from the process
of learning (p. 74).
Figure 2.4 The Product Process Dichotomy

Product models.................................................. process models

BOBBIT (1918)

Bloom's Taxonomy (1956)
Wheeler (1967) objectives
Kerr (1968) objectives

Tyler (1949) objectives

Skilbeck (1976) situational analysis
Eraut (1990) situational analysis & objectives

Eisner's Kettering project 1967

Walker (1971) deliberation

Stenhouse (1975)

FEU model (1982, 1987) needs analysis
Kolb (1984), Davies (1990) experiential learning

Whilst outcomes-led design draws on traditional product and process models it is not a hybrid but an innovative approach which challenges the traditional product and process dichotomy, suggesting in its place, a continuum polarised by designs for teaching at one extreme and designs for learning at the other.
2.3 The Learning Outcomes Approach and Models

The implications of the outcome design are far-reaching as Young (1995) suggests:

any form of outcomes approach to the curriculum is radical when contrasted with typical input approaches and to the extent that it challenges conventional assumptions that link teaching and learning (p.174).

From the point of view of the learner, the outcomes are intended to provide a clear statement of what constitutes learning in a given context in terms of both the content and the process, and the criteria by which they might make judgements about the extent to which the taught sessions facilitates the achievement of these outcomes. This provides students with the information they need to make crucial decisions about what they need to learn and how they should go about it during the two thirds of the total module time which is spent independently of the teaching context. Burke (1995) also suggests that the approach gives the learners criteria for allowing them to demonstrate that they can address the outcomes without necessarily attending a course of study, within the context of HE this might manifest itself in terms of claims for the accreditation of prior learning.

Although the outcomes approach is a design for learning this does not mean that the model represents an abrogation of the responsibilities of the teacher for the learning experience which he/she designs. It might even be said to demand more from the lecturer than the traditional design with its emphasis on the teaching context rather than the whole learning experience of a module. The model requires a clear statement of what learning means to the lecturer, and should mean to his/her students in a given module/course; the onus is on the teacher to shape his/her students' perception of learning. The approach forces the teachers to reconsider the learning experience they design and deliver in relation to the learning which will take place independently of their influence and, crucially, the outcomes they expect their students to achieve. It thus shifts the locus of responsibility for learning from the teacher to the learner, for the latter is made aware of what is expected and how far the shared taught sessions (where they exist) will serve to address these outcomes, the onus is then on the learner to take
responsibility for his/her own achievement of the outcomes. Young (1995) suggests that from the perspective of the institution:

an outcomes approach specifically does not prescribe either the time or method of study. Whether this becomes an incentive for institutions to take greater responsibility for achieving outcomes depends on both its overall curriculum strategy and the incentives for developing such a strategy from the system of funding (p. 174).

What is implied here is that there is no single assumption about how students learn and that an institution may seek to take greater, or lesser, responsibility for the provision of a variety of modes by which the learner may achieve the outcomes.

Both Young (1995) and Burke (1995) refer in general terms to an outcomes approach which the former suggest embodies the principles that (i) a curriculum should be expressed in terms of the outcomes students are expected to achieve; and (ii) that it defines the responsibility of the institution in which the curriculum is located. Their work refers directly to the work of Jessup (1991) in which he proposes a design model (Figure 2.5) specifically intended for NVQ and GNVQ curricula and not for the higher education sector. However because of the seminal influence of Jessup’s model, it merits further consideration.

2.3.1 Jessup’s Model
The starting point of the design process in Jessup’s model (Figure 2.5) is the statement of outcomes which are intended to encourage certain forms of learning without prescribing the learning programme. As Jessup (1995) points out:

the outcomes model is based upon the assumption that learning is a personal and individual experience and that to 'standardise' it by adopting specific modes and time periods is not the most effective means for a group to achieve a set of learning outcomes (pp. 33-34).
Figure 2.5 NVQ/GNVQ Outcome-Led Curriculum Model

Outcomes

(Statement of Competence)

(Statement of Achievements)

Learning

(football, modes, contexts, timescales)

Assessment

(alternative forms of evidence acceptable)

(Jessup, 1991)

The approach thus seeks to see learning from the perspective of the learner and acknowledges and celebrates the learning which is accomplished in relation to the stated outcomes - the lines in Figure 2.5 from the statement of achievements to learning and assessment thus represent a causal link - irrespective of the resources tapped and the location of learning. Jessup (1995) suggests:

individuals need to manage their own learning experiences in a manner which recognises where they start from, their preferred learning styles and modes of learning, and the time and opportunities they have for learning (p. 34).

The implications of this principle are far-reaching for it challenges the traditional conceptual basis of teaching and learning promoting a new learner-centred pedagogy which redefines the teacher/learner relationship and foci of responsibilities. Paradoxically this places more, not less, responsibility on the teacher, a point emphasised by both Young (1995) and Burke (1995). Jessup's model (1991) requires the teacher to make explicit and transparent to learners what they are expected to learn and how they will be assessed; it forces teachers to rethink the way in which they organise the teaching time to create learning opportunities which are congruent with the stated outcomes; it implies that the teacher should seek ways of removing barriers to
learning; and it demands academic counselling skills to inform action planning and guide self-assessment. But Jessup's model is, above all, a design for post 16 vocational education within the remit of NVQs and GNVQs, and whilst the principles on which it is based may be applied to higher education, the model per se is antithetical to the notion of degree and post degree study for reasons which will now be considered.

First a major concern, from the HE perspective, is that the model seeks to separate the assessment of outcomes from the process of learning. Otter (1995, p. 278) comments that:

> the deliberate separation of the teaching and learning process from the definition of what it is intended to achieve has provided the means of using lead bodies (employers) to define standards, and has served to widen access by offering routes to qualifications which do not involve classroom study and formal courses.

Robertson (1995) suggests that this serves to over-emphasise employers interests to the detriment of scholars' interests. Furthermore such a dislocation is neither feasible or practical in higher education where the process of contextualised learning might be said by academics to be a necessary element of the concept of a degree. Prior experiential learning may be accredited towards a degree, but it cannot entail the totality of learning which contributes towards its achievement - at the University of Wolverhampton for example, a maximum of fifty percent of an award may be claimed through APEL procedures.

Second, Jessup's model is equally problematic with respect to the specification of outcomes in terms of vocational competence and the attendant emphasis on core generic and vocational skills. Notwithstanding a shift in the epistemic framework of the HE curriculum to encompass 'knowing how' as well as 'knowing that', the nature of the outcomes implicit in Jessup's model does not foster the cognitive attributes identified in Bloom's taxonomy (Bloom et al 1956) - knowledge, understanding, critical analysis, evaluation and synthesis - which are consistent with undergraduate curricula in HE and which provide the framework for the Generic Academic Outcomes (Appendix

2. A distinction first made by Ryle (1949) and considered in more detail in 2.3.5
1). Implicit in the notion of vocational competence is also the closing down of enquiry once a skill can be adequately demonstrated as having been learned. In contrast:

academic (and vocational) learning in higher education needs to emphasise the equivocal and uncertain character of knowledge and understanding of the world. (Robertson, 1994, p. 133).

Third a distinction can be made between the purposes of assessment within higher education as opposed to that which is explicit in Jessup's model. Academic assessment at undergraduate level currently aims to differentiate groups through a system of classification of grades at a given point, whereas in marked contrast, NVQs and GNVQs seek to attest the competence of all those who reach the required standard within an unspecified time frame. The quintessential difference in the purpose for which Jessup's model was devised has ramifications for curriculum design and implementation which precludes its adoption in the higher education context; an alternative model is thus proposed.

2.3.2 Allan's (1995) model
The broad principles of the outcomes' approach emerging from Jessup's model namely that: (i) a curriculum should be expressed in terms of the outcomes students are expected to achieve; (ii) that it defines the responsibility of the institution in which the curriculum is located; (iii) that the approach is learner-centred, underpin Allan's HE outcome-led model (Figure 2.6). In addition there are two key principles, based on the research into student learning discussed in 2.6, which are unique to this model:-

(i) that there is congruence between the outcomes, assessment tasks and the learning experience;

(ii) that the outcomes, assessment tasks and criteria reflect the level of the module. (Allan, 1995 a, p. 4).

Crucially the learner is perceived as being at the centre of the design and the focus of teaching and learning; so like Jessup's model, it is predominantly a design for learning. The model is based on two assumptions: first that the outcomes, the assessment criteria and tasks
and the learning context together determine the student’s conception of learning, and second that the conception of learning which the student holds in the module context determines the approach he/she adopts and ultimately the outcomes that are achieved. The first of these two assumptions is the subject of two of the research questions in this thesis:

6. What are the curriculum design features influencing students perceptions of learning on the traditional and outcome-led modules?

7. What evidence is there that the design features identified through the process of factor analysis influence students' perceptions of learning?

whilst the second assumption is based on the extensive research into student learning discussed in 2.4.

The model is underpinned by the principle advocated by Mager and Clark (Mager, 1962) that students will learn more, and learn more quickly, if they know where they are going. More recently Ramsden’s research on 4,500 students in fifty higher education institutions has led him to assert that:

it is indisputable that, from the students’ perspective, clear standards and goals are a vitally important element of an effective educational experience (1992, p. 127).

and he goes on to suggest that ‘clear goals and intellectual challenge’ are two of six key principles of effective teaching in higher education. In the model (see Figure 2.6), the prespecified outcomes are lucidly expressed, not in jargon which is exclusively utilised in university validation events, but in language which is intelligible to the learner. Each outcome is elaborated by an explicit statement of the scope in which it is to be applied and by the assessment task and criteria by which it is to be assessed. This does not imply that each outcome is assessed discretely, and indeed includes the ‘bundling’ of outcomes into a single assessment task, as in the example given below taken from a second year undergraduate module in educational research methodology which clearly shows that specific outcomes are integrated for assessment purposes. (For a copy of the complete module see Appendix 6).
Notes:

i. Only outcomes which are assessed are stated. Module evaluation feeds back into the outcomes - hence the two-way arrows;

ii. The outcomes and the assessment tasks and criteria determine the nature of the learning context - hence the one-way arrows;

iii. The student's conception of learning (and teaching) influence his/her evaluation of the module, hence the one-way arrow from the learning context to the student's conception of learning and the two-way arrows between the student's conception of learning and the outcomes and assessment.

(Allan, 1995 b, p. 3)
Learning outcomes:
On completion of the module participants will be able to:
i make a clear statement of a research issue and appropriate research questions;
ii select and justify a research approach, appropriate for a specific research issue;
iii select and justify an appropriate methodology and data collection instruments for a specific research issue;
iv identify the major sources of literature relevant to a given research issue;
v apply knowledge of validity, triangulation and research ethics to a given research issue.

[Assessment of outcomes i-v will be by a written assignment Students will be assessed according to the criteria in Appendix 3]

This grouping of subject-specific outcomes into ‘bundles’ represents a significant departure from the assessment of objectives as advocated by Mager (1962) and by Jessup (1991) who demanded that the standard of performance should be explicitly stated and assessed separately. The process of ‘bundling’ is essential in the assessment of learning outcomes in higher education where subject matter cannot be reduced to disjointed facts and concepts if the integrity of the subject matter or discipline is to be respected, and if the high level of analysis, and synthesis implicit in learning at this level is to be retained. This is explained by reference to the example given on page 32 in which outcome i might be considered to be the key outcome because it is necessarily linked to each of the other four outcomes and provides a focal point for the assessment task. In addition outcome ii and outcome iii are linked whilst outcome ii and outcome v, and outcome iii and outcome v are interdependent. The lecturer’s perception of the conceptual scheme implicit in the module content has thus been clarified for the student through the statement of the learning outcomes, but the ‘intellectual challenge’ of the module has not been compromised by the reduction of the module outcomes to discrete elements.

It might, of course, be argued that the nature of intellectual challenge transcends the fulfilment of specific learning outcomes, however complex and interrelated, and that it involves a journey into the unknown. Herein lies a fundamental paradox for the intention is that whilst the aim is for all students to meet the same outcomes, this is not
to be at the expense of independent thought, and the exclusion of serendipity learning. This dilemma has two dimensions: first how can unexpected outcomes be recognised and rewarded? and second how can students be encouraged to meet, and yet transcend, the stated outcomes, to work towards the achievement of specified outcomes and still make them their own? The first is an issue which is not confined to a learning outcomes model, but is implicit in any curricula in which explicit assessment criteria are specified. In the criteria described in Appendix 3, the inclusion of the descriptor, "the student has presented an appropriate and realistic research design with clear evidence of independent thought." with its insistence on independent thought for the maximum mark of A16, goes part way to facilitating the reward of individual interpretation, but in essence the limitation of the model in this respect is acknowledged and remains. The second issue is perhaps more fundamental. Peters (1965) in his seminal work Education as Initiation argued that knowledge and understanding, whilst necessary elements of what it is to be educated, are not sufficient because implicit in the concept of being educated is the transformation of an individual's outlook by what he knows. In this respect the process of education can never be complete for, "to be educated is not to have arrived at a destination; it is to travel with a different view. What is required is not feverish preparation for something that lies ahead, but to work with precision, passion, and taste at worthwhile things that lie to hand" (Peters, 1965, p.110). The intention of the learning outcome model is not to stultify and close down the process of education by suggesting that the learning outcomes are the final destination as in a competence model, but rather to make use of the sharply focused outcomes and assessment tasks and criteria to influence the student's conception of learning and to thereby encourage them to foster deep approaches to learning (see 2.4.4).

2.3.3 Democratic involvement of students

Whilst the prespecification of tightly structured outcomes may be said to influence a student's interpretation of what learning entails in a given module, the prescription of such outcomes is not consistent with the democratic involvement of students in the design of their own modules. 'Democratic involvement' in this respect is defined as the inclusion of students on an equal footing as lecturers in respect of the content,
outcomes and assessment of their learning. The model assumes that the modules designed are not negotiable in terms of their outcomes, although specific assessment tasks and criteria might well be negotiable within the scope of the given outcomes. In terms of subject-specific outcomes, it might be argued that students are not in a position to negotiate suitable goals and that their involvement in such debate is inappropriate, particularly in the early stages of undergraduate work in unfamiliar areas of study.

In respect to generic academic outcomes too, their prespecification is not claimed to further democratic principles, but it does serve two other important functions. First, when a clear statement of exactly which academic outcomes a given module seeks to develop is made explicit, this allows students to compare the outcomes of modules, both within and between disciplines. Second, this data can then be utilised by students to inform their choice of modules and to assist in the building of a coherent programme of study in which they are aware of the profile of academic outcomes represented across the range of their chosen modules, and in which they are given sufficient information to allow them to become responsible for their own academic development through their choice of specific modules. This is of particular significance when students are compiling a programme of a series of modules to allow them to develop certain personal academic strengths or overcome weaknesses or to make possible the fulfilment of particular career intentions.

The specification of personal transferable skills (Appendix 2), redolent of Jessup's (1991) core skills, emphasises the development of the individual through such strategies as self-assessment and reflection, presentation skills, team building skills and by encouraging students to take responsibility for their own learning. These outcomes are not negotiated individually by students, and in this respect they cannot be said to be characteristic of the democratic involvement of students in their own learning, however they do reflect the principle of learner-centred design which underpins the outcomes' approach.
2.3.4 Underpinning ideologies
The trichotomy of outcomes incorporated in the model, namely subject-specific; personal transferable and generic academic outcomes is not underpinned by a single ideology of education. If Scrimshaw's (1983) succinct analysis of the numerous and substantially similar ideologies into a classification of those that emphasise the learner (progressivism) knowledge (classical humanism, liberal humanism) or society (instrumentalism, reconstructivism) is used as a model for categorisation, then it can be seen that the learning outcomes encompass all three of these categories (see Figure 2.7). To the extent that the specification of personal transferable and academic outcomes takes cognisance of the attributes desired by industry and commerce in their graduate work force, both of these may be said to be characteristic of instrumentalism whilst the former is also learner-centred in terms of the individual nature of the outcomes, and the latter typical of liberal humanism because of its high culture, academic content and close association with the subject-specific outcomes in which they are embedded.

Figure 2.7 Learning Outcomes Analysed By Their Component Ideologies

<table>
<thead>
<tr>
<th>Emphasis</th>
<th>Subject-specific outcomes</th>
<th>generic academic outcomes</th>
<th>personal transferable skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>knowledge</td>
<td>knowledge &amp; the learner</td>
<td>society and the learner</td>
<td></td>
</tr>
<tr>
<td>Ideology</td>
<td>liberal humanism</td>
<td>liberal humanism</td>
<td>instrumentalism progressivism</td>
</tr>
<tr>
<td></td>
<td>instrumentalis progressivism</td>
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</tbody>
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2.3.5 Epistemological perspectives
The subject-specific outcomes encompass knowledge and understanding, attributes which are rooted within what is termed a 'subject'. For the purpose of the model proposed, the term 'subject' is used to denote a set of modules for which a rationale has been put forward and accepted by the validating body.
Subject-specific outcomes are justified on the grounds that ‘knowing-that’ (Barnett, 1994), the possession of a body of knowledge, has long been associated with the achievement of a bachelor's degree. Whilst the notion of what constitutes ‘graduateness’ is currently coming under scrutiny through The Graduates Standards Programme (GSP), Wright (1996) suggests that the award of a degree is still likely to include the achievement of what he terms ‘field-specific’ outcomes namely "the possession of a body of knowledge and other qualities particular to the field (or fields) studied" (P. 2).

But just what might count as 'knowledge' and 'knowing' in terms of subject-specific outcomes requires elucidation. Bloom (Bloom et al, 1956) defined knowledge as, “those behaviours and test situations which emphasise the remembering, either by recognition or recall, of ideas, material or phenomena” (1956, p. 62). He emphasised that, unlike other categories of his taxonomy, remembering “is the major psychological process involved” (1956, p. 62) and that “the major behaviour tested in knowledge is whether or not the student can remember and either cite or recognise accurate statements in response to particular questions” (1956, p. 78). Whilst acknowledging the debt to Bloom, the latter's taxonomy seeks to reduce each element of the cognitive domain to examples of expected behaviour and settings, and to the provision of examples of ‘illustrative test items’ largely in the form of multiple-choice exercises. Viewed from the perspective of the 1990s, Bloom's taxonomy may appear to be over-prescriptive and to atomise learning. Yet, the notion of knowledge, implicit within the taxonomy, constitutes what Marton et al (1992) have categorised as a quantitative conception of knowledge (see Appendix 5 and 2.5) which the findings of this thesis demonstrate epitomises a perception of learning still held by some undergraduate students.

This quantitative conception of knowledge fails to take into account understanding which, in a higher education environment from the perspective of an academic, is a necessary element of what it means to ‘know’ something. Remembering and recalling are not necessarily exclusively separate from understanding and explaining, as Carter, (1985) points out, “it is arguable that these (knowledge and understanding) should be regarded as a single level because knowledge
without understanding can scarcely be said to be possessed in any real sense at all" (p. 139). So possessing knowledge is not just perceived as being synonymous with the recall of facts; it subsumes conceptual ability, intellectual skill. Romiszowski's (1981, P. 241) definition of knowledge provides a useful model to clarify how 'knowledge' might be perceived in these terms within the context of subject-specific outcomes. He suggests that the concept incorporates:

(i) facts (objects, events, people);
(ii) procedures (what to do in given situations);
(iii) concepts (definitions of classes of facts, a given phenomenon);
(iv) principles (which link concepts in a given way; theories and abstractions).

The recall of facts per se is far less crucial to the conception of learning implicit in the outcome-led model than are the higher order activities associated with the recall and understanding of concepts and principles and the undertaking of the procedures suggested by Romiszowski. Implicit in this definition are notions of knowing something and knowing how to apply, between 'knowing' and 'doing' or between the polarity of 'knowing-that' and 'knowing-how' already referred to (see figure 2.8). Barnett (1994, p. 47) suggests that it is this inclusion of 'knowing-how' as an outcome of HE which represents the 'core of the epistemic change' in higher education today.

Traditionally higher education has been said to be more concerned with the acquisition of 'knowledge', than with the fostering and recognition of 'know-how' and 'skill' which have been conventionally associated with lower order activities and have therefore been ostensibly eschewed by academics. Yet ironically the higher levels of the Cognitive Domain of Bloom's taxonomy, (application, analysis, synthesis and evaluation) are examples of the very intellectual attributes which are associated with 'knowing how'- termed generic academic outcomes in the design model proposed - rather than of subject-specific outcomes or 'knowing that'. This is not to suggest that lecturers have not sought to develop cognitive qualities associated with 'knowing how' indeed research by Entwistle and Percy (1974) and Entwistle (1984) has shown that there is consensus amongst lecturers that the intellectual attributes of critical and analytical thinking are at the heart of degree courses, but rather to
Figure 2.8 Knowing and Doing

**subject-specific outcomes**

- facts;
- structures;
- procedures;
- conceptions;
- principles.  
(Romiszowski, 1981)

**Knowing that**

+ **knowing how**

**academic outcomes**

- handling information;
- analysing;
- thinking critically;
- relating theory & practice.  
(see Appendix 1)

**personal transferable skills**

- communication skills;
- organisational skills;
- gathering information skills;
- information technology;
- independent action;
- team-working skills;
- numeracy.

**knowing how**

imply that the way in which learning has been described conventionally has not articulated explicitly what the desired outcomes of learning comprise in terms of knowledge, understanding and generic cognitive attributes. The wooliness of Bloom’s taxonomy in respect to the differentiation between knowledge and generic cognitive attributes has been replicated in the way teaching and learning have been described conventionally in the University concerned through validation documents, information to students and assessment tasks and criteria, none of which has sought to distinguish clearly between subject
knowledge and understanding and the more general cognitive ability which might be common to all graduates. The outcome-led model seeks to foster the articulation of those academic outcomes (see Appendix 1 for an example of these outcomes for education studies) which are concerned with 'knowing how' (see figure 2.8), with enabling the learner to apply that which has been learned, which transcend module specific subject knowledge and which can be deemed to be generic across both a given subject and a group of cognate subjects. The work of the Graduates Standards Programme (Wright, 1996) is exploring outcomes which are closely related to these generic academic outcomes for the project is seeking to "capture what academics regard as the essential attributes of a graduate, what might be termed 'fitness for award'" (P. 2). Current findings suggest that there might be two types of general attributes: those which have been designated 'shared outcomes' which might be common to graduates from 'families of degrees'; and those which HEQC term 'generic outcomes' which might be "common to all - or most - graduates" (p. 2). The HEQC label of 'shared outcomes' currently best describes the generic academic outcomes embodied in the outcome-led model, this is not to suggest that the generic academic outcomes are not 'generic' in terms of the HEQC definition, but rather to acknowledge that research is required to establish whether or not this is the case; such research is beyond the scope of this thesis.

The third type of outcome making up the trichotomy in the model is personal transferable skills (see Appendix 2). The use of the plural form of 'skills' is used to suggest a series of discrete skills which have been identified as the core attributes which employers seek in graduates (Allan et al, 1994). The justification for their inclusion within the model derives not from the HEQC's notion of 'fitness for award', but from what might be termed the fostering of fitness for employability, for these skills are directly related to the enhancement of employment prospects for graduates. Otter in 1992 (p. iv) in summarising her project on learning outcomes in HE suggested that:

both employers and academic staff felt that it was currently possible for people to graduate without some of the key qualities that they expect of a graduate.
The articulation of the transferable skills which a module seeks to develop and assess is a distinct attempt to both foster and celebrate the inclusion of a certain type of outcome within a specific learning experience to ensure that students do not graduate without having had the opportunity to develop such skills. They thus represent an example of the development of 'knowing-how' (see figure 2.8) within an undergraduate programme. Implicit within the inclusion of such personal transferable skills is a perception of higher education which is underpinned by an instrumentalist ideology (see Figure 2.7) in which the extrinsic function of HE, as an economic investment for the individual and the state, is recognised and where the separation of personal transferable skills from degree level study is deemed to be inappropriate. Such a model is entirely consistent with a new university's mission statement which proclaims that:

the University aims to provide Higher Education services to meet the needs of individuals and of society at regional, national and international levels

as well as

providing a lively innovative caring academic community for both staff and students (University of Wolverhampton, 1993).

The inclusion of non-traditional outcomes, particularly in the form of personal transferable skills, is in response to expectations on the part of both students and employers who are more and more perceived as being stakeholders in higher education. Traditionally academics have neither sought opinions or consensus regarding the form or content of their teaching, but a climate of economic recession, concern regarding the employability of graduates, the growth of mass higher education, and the consequent disquiet about what the outcomes of higher education should constitute have led to research into the expectations of both students and employers. A study by Otter (1992) into the outcomes expected of higher education by undergraduates, in nine universities and polytechnics in five subject areas, has shown that students and employers appeared to have more in common in their expectations of higher education than either group did with academic staff (1992, p. 32) This suggests that students are more aware of the qualities sought
by graduate employers than of the factual outcomes, generic
competences and cognitive attributes expected by academic staff (Otter,
1992), a point supported by the fact that 46% of the outcomes
described by students in the research were in a category labelled
personal and social (as analysed against the categories described by
Taylor in Marton et al, 1984). These data are broadly consistent with a
CBI (1991) gallop poll of students, on entry into higher education,
which indicated that 64% of those interviewed said that they expected
higher education to develop personal and social skills.

Otter’s (1992) research with a group of graduate employers from The
Rover Group, Tioxide UK, WH Smith, GEC, Alsthorm, DEC Limited
and the Association of Graduate Recruiters, suggests unequivocally that
these employers are able to recognise a generic set of ‘graduate’ skills
which can be transferred outside the domain of higher education into
the workplace and that it is these skills that they seek from graduates.
Employers are less concerned with the subject and class of degree than
“a generic set of intellectual, practical and personal skills which would
contribute to the development of their own business concerns” (Otter,
1992, p. 3). The single list of skills produced by the group in Otter’s
research (see Appendix 7) subsumes both the academic and personal
outcomes which are specified in the learning outcomes module in Figure
2.6.

The findings from the consultations with employers and students in
Otter’s research suggest that if higher education is to respond to the
needs of industry and commerce, then more attention should be paid to
generic academic outcomes and personal transferable skills which might
apply to all graduates regardless of subject. Whilst the expectations of
academics may include such generic outcomes, their interest
traditionally lies within subject-specific academic goals; the inclusion
of additional outcomes of the type sought through Enterprise in Higher
Education (EHE) thus represents a significant re-conceptualisation of
their role in the provision of mass higher education. This inevitably
necessitates consultation, collaboration and negotiation between
stakeholders in the design of modules and courses and goes part way to
countering the criticism that the prescription of outcomes is essentially
an undemocratic process.
The emphasis on personal transferable skills which is prevalent in Otter's work (1992, 1994) and embodied in the outcome-led design model, is in direct contrast to The Graduates Standards Programme which is antithetical to a perception of undergraduate study which includes personal transferable skills which they refer to as 'ancillary qualities' (Wright, 1996). It is suggested that whilst the possession of such skills might be expected of a graduate, it is not deemed to be the responsibility of HE to teach them:

although it is vital that HE institutions can be sure that all their graduates can demonstrate the possession of relevant ancillary skills before graduation, that is not the main purpose of the project on 'graduateness', which is to identify the attributes that a graduate may be expected to have acquired primarily through the experience of degree-level study (Wright, 1996, p. 7, Wright's emphasis).

Just how students are intended to emerge from HE with a high level of relevant ancillary skills if their programmes do not seek to develop such attributes is not addressed.

The separation of personal transferable skills from what might be considered to be academic study derives from a liberal humanist perspective and a notion that such skills are low in cognitive content and consequently that the teaching of such attributes is not worthy of higher education. Otter (1994) suggests that this is an outmoded perception in the 1990s:

such a separation is increasingly inappropriate in considering a curriculum which will prepare students for a different and unpredictable future. Skills do indeed include activities with a relatively low cognitive content but they also extend to those which demand a more sophisticated understanding of the repertoire of possible responses and greater sensitivity in carrying them out. The introduction of skills into the curriculum is not simply a crude attempt to replace wider academic goals with narrower vocational training, it is a subtle attempt
to develop and extend the wider capabilities of students to equip them for the future (Otter, 1994, p.1).

It might be argued that the pace and scope of technological change will make demands on today's graduates that previous graduates have not experienced. As knowledge becomes less static and more and more widely accessible through the application of modern technology so there will be more of a premium placed on an individual's ability to select and judge the status of that knowledge. This raises the issue as to what undergraduates need to know to avoid their understanding becoming outdated. The corollary of this is that the achievement of outcomes associated with developing 'know how' will challenge the traditional supremacy of 'knowing that'.

The model posited in this thesis seeks to express learning outcomes explicitly in terms of subject specific, generic academic outcomes and personal transferable skills (Figure 2.6). Subject specific outcomes are rooted and developed within the context of the student's degree subject(s), the nature of the concepts, the logical structure, the criteria for truth and the method pertinent to a given 'subject' necessarily constituting a student's in depth subject 'knowledge' as defined by Romiszowski (1981). But some high level intellectual attributes can also be seen to have meaning and application across cognate subjects, these are conceptual abilities associated with high level learning and derive from Bloom's taxonomy (analysis, synthesis, thinking critically, evaluation) and have been articulated and labelled generic academic outcomes in the model (see Figure 2.8 and Appendix 1). Personal transferable skills (known in Jessup's model as core skills), are also made explicit in this model (Figure 2.8, Appendix 2). These skills relate learning to a student's vocational ambitions; they are developed within the context of subject studies, but they are associated predominantly with 'doing' with 'knowing how' rather than 'knowing that'.

2.3.6 Focus on the learner
Whilst design using broad aims and teaching objectives focuses on teachers' teaching the use of the learning outcome-led curricula design model shifts the emphasis to learners' learning, thereby stressing that it is the activities of the learner which are more significant than those
of the lecturer. This is not to suggest that the input from teachers is not important, but rather that learning and teaching are inextricably linked and that the dichotomy suggested by the use of the words teaching and learning is inapposite. Indeed as Biggs, (1990a, p. 681) points out, the Russians have a word ‘obuchenie’ which can mean either learning or teaching, or indeed both. In the learning outcome model (see Figure 2.6) the outcomes of learning are perceived as being dependent on how the learner perceives and consequently approaches the learning experience, and processes the information presented, rather than being dependent upon what the lecturer teaches per se (Weinstein and Mayer, 1986).

Traditional methods of rational curriculum planning have begun with objectives and have sought to ensure that the design process produces a learning experience which is congruent with these prespecified objectives. Emphasis has been placed on the content of the module or course, and has been expressed in terms of the syllabus which was deemed to be the most significant component in the realisation of the stated objectives. In the model presented in Figure 2.6 the learning outcomes might be achieved in a variety of settings by whatever means the student deems to be appropriate, and not exclusively through the direct interaction between lecturer and student. This is of particular significance in higher education, where the contact time between lecturer and student represents approximately one third of the total time required to complete a module. The focus is on learning and the active role of the learner, on the process of learning rather than on the content of the module, and on the learning outcomes rather than teaching objectives which have been the traditional approach to curricula design in higher education. The model is thus a design for learning (Biggs, 1990b) rather than a design for teaching.

2.3.7 Assessment and learning outcomes
Whilst the learner is the focal point of the model, assessment is perceived as being at pivotal; hence the two-way arrow between the learning outcomes and assessment, the two-way arrow between assessment and the student’s conception of learning and the one way arrow between assessment and the learning context (see Figure 2.6). The outcomes determine the assessment tasks, and therefore specifying
what is to be assessed is a prerequisite to deciding how to assess it. But the assessment tasks must be valid in terms of the outcomes that have been stated; thus congruence between the learning outcomes and the assessment tasks is axiomatic. If this internal coherence is to be maintained then the range of outcomes is necessarily modified by the sophistication of the assessment tasks available. This raises issues in terms of the expression and assessment of the less traditional learning outcomes viz. personal transferable skills, and necessitates innovation in the design of assessment tasks and criteria to facilitate the integration of these outcomes into appropriate assessment régimes. Indeed Otter (1992) reported that when less traditional outcomes were articulated during her project, it soon became apparent that alternative methods were required to assess them.

It is suggested that the articulation of assessment tasks and criteria in a manner intelligible to students is as crucial in indicating to them the essence of the learning required as is the elucidation of learning outcomes. The assessment régimes are designed specifically to provide detailed information so that students have a clear statement as to what counts as learning within each module. Assessment and learning are inextricably linked (see Figure 2.6) both because the assessment régime is seen as contributing towards defining what learning is in a module, and because assessment is pivotal in driving or inhibiting learning. Boud (1993) suggests, “the assessment tail wags the dog of learning”, a statement corroborated by research undertaken by Entwistle, Marton and Ramsden which shows that students “sense the relation between learning process and learning outcome, and they study so as to produce the outcome that they expect the teacher to assess” (Schmeck, 1988 p. 317).

Research into student learning has repeatedly demonstrated the influence of assessment on students’ approaches to learning (Biggs, 1989; Gibbs, 1992a; Gibbs, 1992b; Ramsden, 1988) such that Ramsden asserts that “the methods we use to assess students are the most crucial of all influences on their learning” (1992, p.67). As Gibbs (1992b,) points out, sometimes students misread the requirements of the assessment tasks and consequently select an inappropriate approach. He suggests that this is often because it is not sufficiently clear what the
real demands are; this is particularly significant because "if students are uncertain what is required then they tend to take a surface approach" (Gibbs, 1992, p. 10). The model seeks to ensure that the lecturer articulates the outcome, the associated assessment task and the criteria for assessment so that the student is fully aware of the parameters in which he/she may operate and of the congruence between the outcome and the assessment régime.

But it is not just internal consistency between the outcomes and the assessment tasks which is required by the model; assessment is also linked with a one-way arrow to the learning context (see Figure 2.6). It is proposed that the learning outcomes and the assessment tasks determine the nature of the learning context which can be defined as the sum of activities which provide the opportunity for the learner to achieve the outcomes. The context is interpreted by the lecturer both in terms of the form and content of the curriculum of taught sessions and/or a student placement, the assessment tasks and criteria, and the recommendations given to students for their use of directed study time, these are all variables over which the lecturer has control. This internal congruence between the outcomes, learning context and assessment is a necessary requisite of the design model (see Figure 2.6). It is asserted that all three of these components have a direct and significant influence on the way in which learning is conceived by the student in a given context or module. Whilst they are not the sole factors which influence the outcomes achieved by the students, these are the elements over which the lecturer can exercise most control in curriculum design and implementation. The model does, however, place less emphasis on the role of the teaching context, which in traditional curricula design has been at the heart of the planning process in the form of a syllabus (see Figure 2.6), than on the role of the outcomes and assessment tasks and criteria in defining learning in a sufficiently lucid way so as to minimalise the disjunction between students' perception of learning and the lecturer's intentions. The research in this thesis seeks findings to substantiate or refute this justification of the outcome-led design model through two research questions which will be discussed in chapter 5:

6. What are the curriculum design features influencing students' perceptions of learning on the traditional and outcome-led modules?
7. What evidence is there that the design features identified through the factor analysis influence students' perceptions of learning?
2.4 Research into learning which underpins the outcome-led design model

The outcome-led model, in seeking to clarify the distinction between 'knowing-that' and 'knowing-how', examines the relationship between the subject matter and the learner. The traditional view of teaching and learning namely that knowledge exists independently of the learner or any context, and therefore that teaching involves imparting a quantity of immutable facts and ideas which are free from cultural influences or from the interpretation of the learner, is replaced with a model grounded in epistemology which assumes that knowledge is relational. As Laurillard (1993) suggests, higher education teachers do not set out to describe what is known about x, but "how the idea of x can be experienced, where the relation is between knower and object.” Learning is thus about the quality of understanding and can be defined as a change in conception (Dahlgren, 1984) or more specifically as changes in people’s conceptions of aspects of reality (Ramsden, 1988). As Eizenberg (1988, p. 180) points out it may also be regarded as "the means to that end, i.e. how a change between qualitatively different conceptions takes place". Learning is thus perceived as comprising both the what - the outcome and the how - the approach. This differs significantly from the behavioural perspective where learning is an "observable change in a person’s reaction to an equally observable stimulus situation" (Schmeck, 1988, p. 4) and where the behaviour (or observable change) is considered to be relatively permanent.

2.4.1 Constructivism

The constructivist epistemology which underpins the outcome-led design, is predicated on the belief that knowledge is not acquired, “as a collection of abstract entities but rather is constructed in the context of the environment in which it is encountered” (Duffy et al, 1993 p.1). The world is thus seen as being multifaceted and open to different individual interpretations, and context is perceived as being integral to understanding; “meaning arises from context and context is integral to that meaning. People construct knowledge socially through collaboration and discussion” (Duffy, 1993, p.1). This is not to suggest that each individual develops an idiosyncratic interpretation of the world for the process of continually discussing and negotiating the meaning of data, theories, hypotheses etc. results in individuals.
constructing understanding which is consistent with each other. But this does imply that the learner is not a passive recipient of knowledge, but an active participant in its construction; thus it is the learner who plays a central role in constructing, using and reinterpreting knowledge and seeing the world in a different way, rather than the teacher who imparts knowledge per se (Pines and West, 1986). This is elaborated upon by Shuell (1988) who formulated the main characteristics of constructive learning:

(constructive) learning is an active, constructive, cumulative and goal directed process... It is active in that the student must do certain things while processing incoming information in order to learn the material in a meaningful manner. It is constructive in that new information must be elaborated and related to other information in order for the student to retain simple information and to understand complex material. It is cumulative in that all new learning builds upon and/or utilises the learner’s prior knowledge in ways that determine what and how much is learned. It is goal oriented in that learning is most likely to be successful if the learner is aware of the goal (at least in a general sense) toward which he or she is working and possesses expectations that are appropriate for attaining the desired outcome. (pp. 277-278)

Simons (1992) suggests that two additional characteristics of constructive learning should be that it is diagnostic and reflective, which means that learner should become aware of their own personal way of learning.

Entwistle et al, (1993) suggest that this "new generation of cognitive theory" should be considered alongside the theories that have emerged from studies in student learning in HE led by the work of Ference Marton in Gothenburg (Marton and Säljö, 1976, 1984) who challenged the prevailing view of knowledge, pointing out that academic learning can be understood only in terms of the student developing understanding through, “relating new ideas to previous knowledge in an active process which depended crucially on both the specific content being learned and on the context in which the action takes place” (Entwistle et al 1993, p. 332); this is in direct contrast to the perspective in which learning is
seen in incremental terms, as accumulating bits of knowledge, like bricks in a wall (Entwistle et al 1993). Traditionally, education has emphasised factual recall and the acquisition of procedures, a view which is closely allied to a quantitative conception of learning dependent on memorising (Table 2.1 A, B, C), whereas constructivist epistemology demands that information is applied and transformed by the learner; this is consistent with a qualitative conception of learning (Table 2.1 D, E, F).

This perception of knowledge alters the role of the teacher radically from “one who transmits extant knowledge to one who interacts with the student in ways which encourage appropriate constructions” (Biggs 1990 b, p.12), and thereby shifts the focus of curriculum design from what the teacher does to what the learner does. As Shuell (1986, p. 429) suggests:

if students are to learn desired outcomes in a reasonably effective manner, then the teacher’s fundamental task is to get students to engage in learning activities that are likely to result in achieving these outcomes........It is helpful to remember that what the students does is actually more important in determining what is learned than what the teacher does. (Author’s emphasis)

Knowledge is thus subjective and learner-centred, “not as an objectively defined ‘given’ but as something that is socially constructed and historically mutable” (Atkins, 1993 p.259). This represents the antithesis of the objective definition of knowledge implicit in behaviourism; it is this change in epistemology which focuses on meaningful learning where the concepts that are held by a learner influence what is perceived and in which new knowledge is integrated into existing schema resulting in their modification. This affords the pivotal role to the learner and crucially to his/her conception of learning.

2.4.2 Conceptions of learning
From the constructivist perspective, there is no definition of learning per se, at one extreme of a continuum learning might be perceived as being quantifiable in terms of the retention of facts, the first level of Romiszowski’s (1981) definition of knowledge, whilst at the other, from
a constructivist perspective it might be described as being qualitative, a process of interpretation and constructing of one’s own understanding of reality. Säljö (1979) identified five distinctly different conceptions of learning within what he perceived as a dichotomous relationship between quantitative (A, B, C) and qualitative (D, E,) conceptions (see Table 2.1). Work by Van Rossum and Schenk, (1984) Giorgi, (1986),

**Table 2. 1 Categories Describing Conceptions of Learning**

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reproducing</strong></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Learning as increasing one’s knowledge</td>
</tr>
<tr>
<td></td>
<td>A vague quantitative conception of learning as 'knowing a lot'</td>
</tr>
<tr>
<td>B</td>
<td>Learning as memorising &amp; reproducing</td>
</tr>
<tr>
<td></td>
<td>storage of information for subsequent reproduction</td>
</tr>
<tr>
<td>C</td>
<td>Learning as applying</td>
</tr>
<tr>
<td></td>
<td>dawning realisation that learning may involve more than memorising facts, recognition that knowledge and skills can be useful in the real world.</td>
</tr>
<tr>
<td><strong>Transforming</strong></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Learning as Understanding</td>
</tr>
<tr>
<td></td>
<td>recognises that learning involves insights into relationships within subject matter and between subject matter and reality</td>
</tr>
<tr>
<td>E</td>
<td>Learning as seeing something in a different way</td>
</tr>
<tr>
<td></td>
<td>learning seen as a means of understanding the world around us by reinterpreting knowledge</td>
</tr>
<tr>
<td>F</td>
<td>Learning as changing as a person</td>
</tr>
<tr>
<td></td>
<td>learning as personal growth and development, self-actualisation</td>
</tr>
</tbody>
</table>

(Based on Van Rossum and Schenk, 1984 and Marton et al, 1992)

and Martin and Ramsden, (1987) is isomorphic with Säljö’s findings and has accordingly established these five conceptions of learning. A sixth conception (F) was proposed by Van Rossum and Taylor (1987) and replicated by Marton et al (1992) and has been added to the Säljö’s original five categories (See Table 2.1 and Appendix 5). These conceptions are seen as hierarchical with each conception subsuming those that precede it. Whilst the conceptions differ qualitatively, as
Entwistle (1991, p. 2) has pointed out, "it appears that there is a major distinction between whether learning is seen as requiring the reproduction of information presented, or the transformation of that information in the process of coming to understand it for oneself". The same distinction between reproducing and transforming information, between conceptions A, B, C and D, E, F is reflected in the deep and surface approaches to learning described by Marton and Säljö (1976) and discussed later in this chapter.

Svensson (1984 a, p 278) describes a conception as "a certain delimitation of a phenomenon from the context or background, and of its component parts and the relations between them". In his (1988) interpretation this is what Marton refers to as the structural aspect, the how of a conception of learning, which is commonly known as the approach. Marton (1988) also defines another aspect of a conception this is what he terms the referential aspect, the what of a conception, which might be referred to as the outcome. The structural aspect is inextricably intertwined with the referential aspect, such that a conception comprises both a what and a how. Ramsden (1988, p. 27) suggests that a conception always has two parts: "the idea being conceptualised and the person doing the conceptualising" these denote what Marton (1988) refers to respectively as the what and the how of a conception.

Marton suggests that a student's conceptions of learning differ both with regard to the structural aspect "how the phenomenon and its component parts are delimited and related to each other" (Marton et al 1992, p. 278), and the referential aspect - the global meaning of learning. Furthermore the structural aspect, and the referential aspect, can each, in turn, be discerned in terms of the 'what' and the 'how' aspect (see Figure 2.9), "as the approach to learning has a holistic or atomistic aspect to it, so too does the outcome of learning have a hierarchical or sequential structural aspect" (Marton, 1988, p.66). The structural aspect of each has both an external and internal horizon; the former refers to whether the conception is related to the learner's 'life world' (Marton et al 1992) or whether it is confined to the study
Figure 2.9 The *how* and the *what* of learning

Learning

How - approach

How
structural aspect (organisation)
holisitic/atomistic

What
Referential aspect (search for meaning)
deep/surface

What - outcomes

How
structural aspect
hierarchical - patterns,
principles, relationships/
sequential - unrelated facts,
discrete elements,
reductionist

What
referential aspect
emphasising
meaning, intention
to communicate/
emphasis on
literal sense.

(Adapted from Marton, 1988, p. 66)
situations. The latter refers to the component factors which are implicit in the conception e.g. in conception A the internal horizon comprises the learner, the act of learning facts, and the pieces of knowledge which are acquired, whereas in conception D the internal horizon relates to the learner who develops/grasps/disCOVERs some personal meaning from the learning material (see Appendix 5). Research undertaken by Marton et al (1992) has resulted in a taxonomy of conceptions of learning which gives detailed characteristics of both the structural and referential aspects of each conception of learning and the external and internal horizons which typify each conception (see Appendix 5). This taxonomy was used as the basis for the analysis of the data in this thesis (see chapter 3).

2.4.3 The importance of conceptions of learning

The importance afforded to conceptions of learning in the outcome-led model is premised on thinking about learning as a "qualitative change in a person's way of conceptualising something" (Ramsden, 1988, p. 26) and consequently "to teach an individual something new means to effect conceptual change in his or her beliefs" (Kagan, 1992, p. 76). Learning is thus perceived in terms of changes in conceptions, rather than the accretion of knowledge. Prosser and Millar, (1989, p. 527) suggest that this is an idea which is not readily familiar to students who need to:

- develop a commitment to the conception of learning as one which seeks to change and develop a commitment to new conceptions of the subject matter being studied, at the same time as developing techniques which will help them to implement that conception of learning

Such a commitment to a new conception of a subject is perhaps the answer to the problem identified earlier about getting learners to transcend learning outcomes.

Viewing learning from a phenomenographical perspective (see chapter 3), the underlying rationale is that "people act on their interpretation of the situations they find themselves in rather than on the objective, matter-of-fact characteristics of situations" (Säljö, 1988, p. 36), how and what student's interpretation of a learning context is expressed as
his/her conception of learning. But this conception is context-dependent (Laurillard, 1979) such that students may hold different conceptions in different learning situations, although they may still hold a relatively stable preference for one conception or another (Entwistle and Ramsden, 1983). The implications of this are that students in the same learning context may hold different conceptions of learning from each other and indeed from that of their lecturer and that consequently they understand the tasks facing them in different ways (Morgan, 1993, p. 55).

Conceptions of learning have significant ramifications for both lecturers and students. Research (Russell and Johnson, 1988), Crooks, (1988), Shalveson and Stern, (1981), and Entwistle (1984) have suggested that lecturers’/teachers’ perception of what constitutes learning influence curriculum design in terms of the nature of the outcomes they specify, the assessment tasks they set and how they perceive their role as a teacher. This suggests that lecturers with a quantitative and essentially reproductive perception of learning (A, B and C in Table 2.1) emphasise the transmission of knowledge, effective management of resources and tend to plan in terms of the activities that they will carry out, whilst lecturers who perceive learning as involving deep understanding and personal meaning for the learner (D, E and F in Table 2.1) see their role as helping students to construct knowledge for themselves and to take responsibility for their own learning. This approach stresses the role of the learner, and planning is therefore conceived in terms of what the learner, and not the lecturer will do; this is what is implicit in what Biggs (1990b) calls a design for learning rather than a design for teaching.

In terms of the students, their conception of learning is significant because their interpretation of what is meant by learning (their so-called conception of learning) is deemed to be crucial in determining the approach that they adopt to their study. Schmeck, (1988, p. 317) suggests that, “the way we go about accomplishing learning will, of course, depend on what we conceive of learning to be”, and Marton (1988, p. 53), asserts that:

any description of differences in learning between people in how they learn and any attempt to improve their ways

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of learning is contingent by logical necessity on what counts as learning.

An illustration of the implication of the connection between a student's conception of learning and his/her approach is given by Morgan (1993) who in his research found that different perceptions of learning led to differences in what students actually did in a lecture situation. Some of the students wrote detailed notes on all kinds of factual information but ignored theoretical statements, even when the lecturer indicated that what was about to be said was important, and many students completely ignored abstract ideas and general points such that their notes at the end of the lecture were confined to a chronological list of events. When asked to write down what they felt the three most important things in the lecture were, none of the sixty students gave the same points as the lecturer, and only about twenty had written down one or two of them. Morgan suggests that "what the lecturer thought was important, and should have been learnt, was not perceived as important by the students" (1993, p. 56). There was clearly dissonance between the lecturer's intentions and the students' interpretation of those intentions; the problem being that in misinterpreting what learning was about the students focused on the wrong aspects of the lecture and consequently failed to achieve the outcomes which the lecturer had intended. The notion that there is a connection between a student's conception of learning, his/her approach in a given context and ultimately the outcomes achieved will now be considered in more detail.

2.4.4 Approaches to learning
Originally proposed by Marton and Säljö (1976) an approach is defined by Ramsden, (1987, p. 276) as "a relation between a learner and a learning task - the description of an intention and an action". The approach is not a constant characteristic of a learner or something that is possessed and used as required, but rather the approach is what a learning task actually is for a learner (Marton, 1988, p. 75), it is a response to the student's subjective perception about what learning involves in a given module. A student's conception of what learning entails encourages the selection, conscious or not, of certain kinds of approach to learning over others (see Figure 2.10). An approach is thus a relational phenomenon, for it represents the relation between a learner and the learning task. Just as the 'what' and the 'how' of an
outcome can be discerned, so an approach has two distinct aspects (see Figure 2.11), namely the referential aspect, which focuses on whether students are actively seeking to understand - the *deep* approach - or whether they are seeking to focus literal interpretation regardless of meaning - the *surface* approach (see Appendix 8), and the structural aspect (Marton, 1988) which is concerned with whether a learner seeks to relate concepts, ideas and principles taught both within and across modules - the *holistic* approach - or whether they seek to distort the task by keeping elements separate - the *atomistic* approach (see figure 2.11). Whilst sometimes referred to as deep-holistic and surface-atomistic, the approaches are more commonly referred to in the shortened form of deep and surface approaches. An important distinction between the two approaches is that the former leads to "an active process of learning in which the student challenges the ideas, evidence, and arguments presented, and sees links with personal experience and the outside world" (Entwistle, 1988, p. 24), whilst in a surface approach the student is "concerned with verbatim recall of either the whole text or the facts and ideas presented. There is little or no personal engagement in the act of learning: it is seen as an external imposition" (Entwistle, 1988, p. 24).

Research carried out by Marton (1976) in Gothenburg, and paralleled by Svensson (1984 a) and Van Rossum and Schenk (1984) showed that the "hierarchical outcome tends to coincide with the holistic approach, while the sequential outcome tends to coincide with the atomistic approach " (Marton, 1988, p. 66). Those who are concerned with reproducing superficial signs of learning, who perceive learning in
Figure 2.11 The *How* and the *What* of an Approach to learning

**How**

'Structural' aspect: the act of experiencing, of organising, of structuring

**WHAT**

'meaning' aspect: that which is experienced, significance of the task

**HOLISTIC**

Focuses on relating the components, making connections, the whole in relation to the parts.

**ATOMISTIC**

focuses on separate components in a task, segments the whole, distorts the structure

**DEEP**

maximises understanding, focusses on what the task is about

**SURFACE**

focuses on unrelated parts, memorises, focuses on the signs and not the meaning

Based on Marton (1988, p. 66), and Ramsden, (1922 p.43)
quantitative terms (conception A, B or C Table 2.1) tend to adopt a surface-atomistic approach to learning, focusing on achieving the minimum required to avoid failure, whilst those who seek to discover meaning and understanding, who perceive learning in qualitative terms (conception C, D, E see Table 2.1), tend to adopt a deep-holistic approach to learning, focusing on high level activities of integration, critical analysis and synthesis. Thus with its intention to understand, a deep/holistic approach is more consistent with the achievement of outcomes of higher education than a surface/atomistic approach.

More recent work by Entwistle (1988) has identified what might be termed a third approach to learning; namely an achieving approach. This is characterised by the student striving to realise the highest grade possible by optimising his/her organisation of time and effort to achieve the outcomes which have been prescribed. As more part-time students embark on higher education and financial pressures become more and more acute, increasingly for the student the nature of his/her learning experience is becoming contingent upon personal circumstances such that students concentrate on what counts, on achieving institutional demands and on meeting deadlines, but otherwise cutting corners. It may be associated with either a deep or a surface approach, with seeking meaning or learning by rote, the approach adopted being dependent on the demands of the task in hand.

2.4.5 The relationship between learning approach and learning outcome
An impressive body of research (Entwistle and Ramsden, 1983, Watkins, 1983, Marton and Säljö, 1976, 1984, Van Rossum and Schenk, 1984, Biggs, 1987b, and Whelan, 1988,) has justified unequivocally Säljö’s assertion that students’ conception of learning profoundly affects their approach to learning and that in turn, there is congruence between the approach adopted and the quality and quantity of the learning outcomes realised. Svensson (1977, 1984 b) has asserted the close relationship between the process of learning and the outcome achieved whilst Biggs (1990b) contends that the relationship between approaches and outcomes are exceptionally strong. Ramsden (1992, p. 53) goes further in asserting that there is no uncertainty about the close relationship between how students go about learning what they learn and that:
it does not seem to matter whether approaches are measured by means of questionnaire or interview, whether the subject is engineering or history or medicine or whether the outcomes are defined in terms of grades or some qualitative measure of learning.

Thus the quality of the learning outcome is dependent upon the approach to learning adopted (Biggs and Moore, 1992; Morgan, 1993, Ramsden, 1988) which in turn is dependent on the conception of learning held by the student (see Figure 2.12). Different approaches to learning lead to different outcomes. Deep approaches generate what might be termed 'higher quality outcomes', which maximise

**Figure 2.12 From Approach to Outcome**

```plaintext
conception of learning
students' conception of what learning entails in a given module learning

approach to learning:
deep, surface, achieving

learning outcomes:
quantity and quality
```
understanding, whilst surface approaches result in unreflective and factual outcomes - 'low quality outcomes'. As Entwistle (1988, p. 44) points out it is logically impossible for a surface approach to "produce an imaginative reconstruction of previously unrelated ideas or information". Gibbs (1995, p. 23) goes further and suggests that:

the connection between [these] underlying conceptions of learning and the approach students take to specific learning tasks is so strong that it is possible to predict the quality of learning outcomes directly from students' conceptions of learning.

Students react to their perceptions of learning in context; a reaction which is manifest in their approach and implicit in the outcomes they achieve. The way in which material is understood corresponds to the way it which it is organised, thus there is a relationship between the act of learning and the outcome, and between students' conception of learning and the act of learning. The conception of learning, the approach to learning and the outcome of learning therefore form part of a unified whole rather than representing discrete unconnected elements.

2.4.6 A Relational View of Learning
This view of learning has led to what Ramsden terms a 'relational perspective' on learning and teaching which has distinctive characteristics which emerge from the discussion in 2.4 of this chapter. First learning is concerned with "changes in people's conceptions of aspects of reality" (Ramsden, 1988, p. 26), it is about "the quality of understanding, not the quantity of information he or she can produce on demand." The second characteristic of a relational view is that the process of learning - the how - and the outcome of learning - the what - should be perceived as a unified whole. This is succinctly summarised by Marton, who suggests that an alternative way of thinking about learning is to realise that:

what is learned (the outcome or the result) and how it is learned (the act or the process) are two inseparable aspects of learning (1988, p. 53).

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Conceptions of learning and approaches and outcomes are closely related; they represent what a learning experience or task actually is for a student. Understanding the relationship between students, what they are required to learn and what teachers do thus requires “conceptualising the teaching and learning process holistically” (Ramsden, 1987, p. 275), rather than focusing on discrete elements. The traditional dichotomy between product and process which has been at the core of curriculum design is thus challenged by this view. The corollary of this is the third characteristic which is that improving learning is not concerned predominantly with the characteristics of students, their ability or learning styles or about teaching methods, but with the inter-relationship between the process or act of learning (the ‘how’) and subject matter (the ‘what’). Thus the focus is on the “relations between students, what they are required to learn, and what teachers do” (Ramsden, 1988, p. 27). Unlike modern cognitive psychology with its concern for what is taking place within the ‘black box’ of the human mind (Melton and Marton, 1972), a relational perspective is about exploring students’ conceptions of learning in context that is of subject matter and how these may be changed. Thus it does not seek to focus on the individual, but rather the approach stresses the relationship between the individual and the environment; it is therefore concerned with the learner in context (Schmeck, 1988).

The relational perspective is what Ramsden terms an ‘educationalist’s view’ of learning and teaching as opposed to a purely psychological perspective; it has significant implications for curriculum design for:

if we were to think of approaches and conceptions as something located within the individual, as it were, then we try to change the individual or something in him or her, given that our aim is to improve learning. The alternative is to try to change the individual’s experience, perception or conception of something (Marton, 1988, p. 75).

In a quest to improve learning it is the student’s perceptions that are the starting point; if lecturers can structure learning experiences so that students perceive them differently, then they will approach them differently (Schmeck, 1988). This suggests that appropriate interventions to improve learning, which is interpreted as encouraging a
deep approach, should not be directed at the learning environment per se but:

as a two pronged attack: (1) at the learning environment itself; and (2) at the student (via changing conceptions of learning (Eizenberg, 1986, p. 24).)

The focus for improving learning lies with the conception of learning held by students, rather than on the subject matter being taught. This represents a shift from a cognitive to a metacognitive perspective which accords the student the pivotal role in the learning process.

2.4.7 Metacognition
Much of the work of cognitive psychology has concentrated on memory and information processing, whereas metacognition refers to the processes involved in learning to learn. Nisbet and Shucksmith (1984, p.1) call metacognition 'the seventh sense' and defines it as:

the awareness of one's own mental processes, the capacity to reflect on how one learns, how to strengthen memory, how to tackle problems systematically - reflection, awareness, understanding, and perhaps ultimately control.

It is thus is about bringing the processes of learning to a conscious level (Nisbet and Shucksmith, 1984) and gaining control over the organisation and orchestration of learning, about taking responsibility for one's own learning. 'Metacognition' or what Dewey labelled 'reflective self-awareness' is thus concerned with the process or the 'how' of learning, problem-solving and thinking and the ability to select the appropriate cognitive strategy for a given learning task. As Robinson, (1983, p. 106) suggests:

One of the interesting characteristics of people is that they not only behave, but can watch themselves behaving, and believe that they can exert a certain amount of control over how they behave. People are active agents who can be aware that things are or are not going as intended, who can deliberately optimise their performance, who can learn from having become aware of their mistakes.
Metacognitive strategies are concerned with self-management e.g. planning; time-management; self-assessment; personal target-setting; monitoring; reflecting on one’s performance and awareness of preferred learning styles. These are the skills which are subsumed into personal transferable outcomes in the learning outcomes model. Research into the teaching of modules/courses in higher education which aim to raise students’ awareness of metacognitive skills and to develop their ability to select appropriate strategies for a given situation, suggest that such skills do have the potential to improve students’ repertoire and application of metacognitive strategies (Weinstein and Meyer, 1986, Nickerson, 1988, and Anderson, 1990). But the strategies learners adopt are related more to their perception of what is required by the assessment tasks set, in other words, their conceptions of what counts as learning in a given context, rather than by their knowledge of specific metacognitive strategies (Ramsden, Beswick and Bowden, 1986). This reaffirms the commitment to learning-in-context which has emerged from current research into learning and supports the holistic and integrated approach to curriculum design proposed in the learning outcome-led model.
2.5 Models of learning in context

Models of learning in context (Ramsden, 1988; Biggs, 1990 b; Prosser 1995) posit aspects of the learning environment which influence students' perceptions of learning. The importance of these models for curriculum design lies in the potential of the teaching/learning context to modify and shape a student's perception of learning and consequently his/her approach and the outcomes that are ultimately achieved. The models are all examples of a systems approach to design in which:

the ecology of a system, a change to any one component will have effects throughout, but if the rest of the system is resistant to change, then that one component will not change either (Biggs, 1990 b p. 13).

The shaded areas on the three models (page 86, 87, 88) all relate to the contextual variables over which the lecturer has control such that it is possible to structure the learning environment to maximise the congruence between a student's adaptive responses and the lecturer's conception of learning. The focus of the research in curriculum design in this thesis is on a more specific identification and articulation of these variables. First by investigating whether changes in the design can affect students' conception of learning and whether the design can result in greater congruence between lecturers' and students' conceptions of learning, and second by providing greater specificity and clarity to the contextual variables by proposing design factors which influence the way students perceive learning.

In his model Ramsden (1988) suggests that teaching (the method of transmission of what is learned), and the assessment and the curriculum (content and structure of what is learned), serve to shape a student's perception of learning, and that the point of contact between the context and the student experience is the experiential link of how the student perceives learning in context (Figure 2.13). The three contextual domains may promote the use of certain learning approaches and constrain the implementation of others, for example:

learning material may lack a structure which can be meaningfully grasped; it is not possible to use a learning process other than memorising or imposing meaning.
through a mnemonic strategy to learn such material (Ramsden, 1988, p. 160).

The context is also deemed to influence a student's conception of learning through the way in which the requirements of learning tasks are interpreted, although this is also affected by his or her previous experience which shape the decisions which are made to adopt different approaches. The student's perception of learning in a given context remains pivotal as Ramsden (1988, p. 162) suggests:

interventions to change approaches to learning will be more or less successful depending on the student's perception of the demands of the learning context in relation to the intervention.

Both the research discussed in this chapter and the overarching framework represented by the relational view of learning are also embodied in Biggs's (1990 b) Presage-Product-Process ('3P') model of learning (Figure 2.14) in which the three main components form an interacting system. The model, based on earlier work by Dunkin and Biddle (1974, p. 38), does not separate out and give the high profile to conceptions of learning which the research into student learning suggests is justifiable and which is apparent in Ramsden's (1988) model, but it does serve to articulate the range of influences acting on the development of a student's conception, the latter being determined by both the teaching context and by prior experience or 'presage'. At presage student characteristics are mostly unmodifiable by teachers except, crucially in terms of their conception of learning which consistent with research findings is not perceived as being a fixed characteristic (Laurillard, 1979), but deriving from previous experience and the interpretation of what Biggs refers to as the 'climate for learning' which acts upon a student's preconceptions and level of motivation and cognition. Within a modular system a student may well have a different conception of learning, and consequently a different approach and achieve different outcomes, with respect to discrete modules in a given semester. But "at presage, students' conceptions of learning and teaching may be changed by what they see of the teaching context" (Biggs, 1990 b, p. 14). The second 'P' in the model, the process, refers to the approach which a student adopts (consciously or
unconsciously) contingent upon presage characteristics and his/her conception of learning for the given context. In this respect "process" in Biggs's terms differs significantly from the use of the term 'process' in traditional curriculum design in, for example, Stenhouse's (1975) model in which process refers to the teacher-led interaction between the teacher and the student, and not the way the learner actually goes about learning. Returning to the model, the third 'P', the product which is the learning outcome, is affected qualitatively by the second 'p', the approach the student adopts. Unlike in Ramsden's model, the outcomes are linked back to both student characteristics and to the teaching context, Biggs thereby suggests that students' perceptions of the learning outcomes "will determine inter alia their beliefs about their own efficacy, which are crucial in determining the quality and extent of
their future involvement in learning" (Biggs, 1990 b, p. 14). The outcomes thus indirectly influence and are influenced by the process of learning.

Prosser (1995) proposes a similar model (Figure 2.15) which is consistent with the research into student learning underpinning this thesis. Like both Ramsden and Biggs, Prosser recognises the influences of student prior experiences and perceptions of learning, but unlike them he refers to the influence of a student's orientations by which he means the values and attitudes towards education and the approach to study which a student holds at presage. Unlike Biggs, Prosser separates student perceptions of learning into a discrete box thus giving greater prominence to the causal link between conceptions, approaches and outcomes. This makes Prosser's model more representative of the importance afforded to students' conceptions of learning within the research into student learning than Bigg's model suggests. The second strong feature of this model is that the shaded box does not refer to
Prosser, (1995, P. 1)  (Author's shading)

the teaching context, as in Ramsden's and Biggs's models, but more appropriately in a design for learning, to the learning context. Consistent with Biggs (1990 b) and Ramsden (1988), Prosser suggests that course and the departmental learning contexts are influential in determining the way students perceive learning, without suggesting the specific design factors which might shape students' conceptions. A further limitation of this model is that it fails to indicate the direction of influence; whilst the body of research on student learning suggests that arrows should flow from left to right, this does not elucidate the position regarding the impact of outcomes. Biggs (1990 b) suggests that learning outcomes, as well as being determined by conceptions and approaches also have an impact on both student characteristics and the teaching context; this is an influence which is not reflected in Prosser's model.
2.6 Current research into student learning and its implications for curriculum design

The previous sections have sought to examine critically the context for outcome design, the learning outcome-led design model and the theoretical framework and principles which underpin the model. Current research into student learning and its relationship with curriculum design will now be considered and related to the outcome-led model, thus providing the context for the data collection.

Gibbs (1992a, p. 149-150) has commented on the "coherent, rich and illuminating picture" provided by research into how students learn in higher education, how they develop and change and into what influences their approaches to learning, yet as he points out, "it has led to few changes in course design". Curriculum design is concerned with defining and manipulating the principal components over which the teacher has control in order to maximise learning in a certain context. Laurillard (1979) has suggested that the variables identified in curriculum theory - assessment, teaching and course structure are critical in determining student learning, an analysis supported by Eizenberg who suggested that "study orientations and approaches are influenced by the student's perceptions of the learning environment (context) in particular the course structure and organisation, teaching and assessment" (Eizenberg, 1986, p. 25). These are the three variables which were made explicit in the shaded boxes - the teaching or learning context - of Ramsden's, Biggs's and Prosser's models of learning. It has also been argued by Entwistle and Ramsden (1983, p. 111) on theoretical grounds, that "curriculum (what is to be taught and learnt), pedagogy, (how what is to be learnt is transmitted) and assessment (what counts as valid realisation of knowledge on the part of the learner) are those components of the academic environment which are most intimately related to learning". This is not to suggest that learning is not affected by other factors, some of which obtain prior to learning, but rather that the curriculum designer is explicitly concerned with the variables which are within the control and remit of the teacher. A considerable body of research into student learning in higher education suggests that students can adopt a surface, deep or achieving approach to learning, they "simply respond strategically to the perceived demands of the course" (Gibbs, 1992a, p. 153). The design of the
learning context is thus a crucial determinant in shaping how students perceive learning.

2.5.1 Research into course features affecting students’ learning
Many studies in The Netherlands, UK, Australia and Sweden have involved research into course features to identify what it is about courses which affects students. An early study by Gaff et al (1976, pp. 293-293) on what they termed the ‘learning atmosphere’ and learning environments in four departments in a Dutch university, found that they differed in terms of:

1. Time required of students;
2. Understanding of students’ needs;
3. Room for students’ interests;
4. Relevance of the subject matter to future career prospects;
5. Personal attention to students;
6. Commitment expected of students;
7. Differences from secondary school;
8. Respect for students;
9. Availability of information;

Gaff et al (1976) concluded that the effectiveness of learning might well be related to the nature of the learning environment encountered in a department. The possible relationship between the attributes of a department and the quality and quantity of student learning was further explored in the 1970s, notably by Fransson, (1977) and Ramsden (1979). Following on from Gaff et al’s work and using his Course Perceptions Questionnaire (CPQ), Ramsden sought to identify the characteristics of academic departmental environments by means of students’ perceptions. He identified eight main components (see Figure 2.16) which were both stable and replicable and where differences could be perceived between departments.

Further work on the CPQ undertaken by Ramsden and Entwistle (1981) Entwistle and Ramsden (1984) led to a modification and qualification of the original eight dimensions to those set out in Figure 2.17 below. They found that departments which were rated by students as having good teaching and freedom in learning were more likely to have students with higher than average scores on meaning orientation and that there was evidence that “good teaching, greater freedom in
Figure 2.16 Dimensions of Learning Environments
1. Relationship with students
2. Commitment to teaching
3. Work load
4. Formal teaching methods
5. Vocational relevance
6. Social climate
7. Clear goals and standards
8. Freedom in learning
(Ramsden, 1979, p. 416)

learning and avoidance of overloading are likely to move students away from surface and towards deep approaches and also to improved attitudes” (Ramsden and Entwistle, 1981, p. 381). The research demonstrated that there is an important connection between students’ approaches to studying and their perception of the learning environment and affirmed Laurillard assertion that learning is ‘context-dependent’ and that :

the most important factors influencing the student’s choice of strategic approach and style of execution of the tasks are (a) his own orientation towards the task, (b) his perception of teaching (c) his perception of the task itself (Laurillard, 1979, p. 407).

Figure 2.17 Modified Dimensions of Learning Environments
1. **Openness to students** - friendly staff attitudes, a preparedness to adapt to students’ needs
2. **Good teaching** - well-prepared, helpful, committed teachers
3. **Work load** - heavy pressure to fulfil task requirements
4. **Formal teaching methods** - lectures and classes more important than individual study
5. **Vocational relevance** - perceived relevance of course to careers
6. **Good social climate** - quality of academic and social relationships between students
7. **Clear goals and standards** - assessment standards and ends of studying clearly defined
8. **Freedom in learning** - discretion of students to choose and organise their work

The CPQ was later modified by Ramsden et al (1989), and Entwistle and Tait (1990) and its name changed to the Course Experience Questionnaire (CEQ). The revised questionnaire, which resulted from extensive developmental work in which the items and scales were rigorously tested and compared with external criteria, was then used in a national trial in Australia in 1990 from which there were 3372 responses from students in higher education. The results "demonstrate
the predicted affinity between the quality of student learning and students’ perceptions of aspects of teaching described by the CEQ scales” (Ramsden, 1991b, p. 135). They were very similar to previous studies and were in accordance with the theoretical framework provided by previous research into student learning in HE. An interesting dimension was added to the use of the CEQ by using it in conjunction with the Approaches to Study Inventory (ASI), developed by Entwistle and his colleagues at Lancaster University (and in parallel by Biggs in Newcastle University Australia), which identifies students’ approaches to learning. The results shown in Table 2.2 below show that there are two dimensions relating heavy workload and inappropriate assessment to a surface approach to learning, and another linking good

<table>
<thead>
<tr>
<th>CEQ scale</th>
<th>Deep approach 1</th>
<th>Relating ideas</th>
<th>surface approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good teaching</td>
<td>0.15</td>
<td>0.29</td>
<td>-0.10</td>
</tr>
<tr>
<td>Clear goals &amp; standards</td>
<td>0.10</td>
<td>0.24</td>
<td>-0.24</td>
</tr>
<tr>
<td>Appropriate workload</td>
<td>0.04</td>
<td>-0.13</td>
<td>-0.45</td>
</tr>
<tr>
<td>Appropriate assessment</td>
<td>0.17</td>
<td>0.05</td>
<td>-0.43</td>
</tr>
<tr>
<td>Emphasis on independence</td>
<td>0.02</td>
<td>0.18</td>
<td>-0.27</td>
</tr>
</tbody>
</table>

Values >0.18 are significant at $P <0.05$
(Ramsden, 1991b p. 136)

1 see Appendix 8 for definitions of deep and surface approaches

teaching and clear goals to approaches which aim at understanding. The learning outcome-led model particularly emphasises two of these four factors; namely clear goals and appropriate assessment and their importance in influencing students’ conceptions of learning.

The significance of appropriate assessment in curriculum design has been stressed by Gibbs (1992,b p. 10) who suggests that:

there is a considerable amount of evidence that assessment tasks dominate what students are oriented towards in their learning. The nature of the assessment tasks are significant in signalling to the student the approach required.

It is thus deemed to be vital that the assessment tasks are expressed sufficiently clearly to signal to the student what are the real demands of
a module’s assessment régime. The misinterpretation of assessment tasks can lead to a misconception about learning and in consequence the adoption of inappropriate approaches to study which are not consistent with the achievement of the outcomes desired by lecturers.

2.5.2 Design strategies for improving learning
The research into the course experience factors which affect students’ approaches to learning has led to a number of suggestions regarding the strategies which should be adopted in order to facilitate an improvement in learning. Recent work by Ramsden (1990), Gibbs (1992 b) and O’Neil (1995) have included strategies which are associated with course design and these have been summarised below in Table 2.3, their full version can be found in Appendix 9.

There is some consensus in respect of eight out of the thirteen strategies suggested. Reflection and personal development are inextricably linked and are consistent with a deep approach to learning; it is therefore not surprising that they feature in all three lists and indeed in the transferable skills which are an essential dimension of the learning outcome model. ‘Learning by doing’ is implicit in the notion of a design for learning which emphasises what students do both during student /lecturer contact time and during independent/directed time which is so much a part of learning in higher education. Agreement regarding this strategy is therefore to be expected. The emphasis on clear goals is consistent with the findings of Ramsden (1991b), but there is an unequivocal tension between curriculum design which gives a clear indication to the learner of what is expected in terms of outcomes, and the notion of independent learning which features in Gibbs’s list. It is not surprising that Ramsden and O’Neil, who both advocate clear goals, do not suggest independent learning as a principle strategy, or that independent learning is not a feature of the outcome-led model. The outcome-led module does not prevent students from negotiating within the outcomes designated for a certain module, but it does limit the extent of choice and student autonomy in terms of assessment criteria and tasks. On the other hand independent group work, which encourages co-operative learning and interaction between students, is perceived as a principal strategy by Ramsden, Gibbs and O’Neil and it is also embodied in the outcome model. The use of student experience as
Table 2.3 Design Strategies for Improving Student Learning

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Learners taking responsibility for their own learning.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<table>
<thead>
<tr>
<th>Reflection **</th>
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<tbody>
<tr>
<td>Reflection with a view to helping students to take responsibility for their own learning. Learner activity as well as knowledge base.</td>
<td>✓</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning by doing **</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Emphasises learner activity &amp; experiential learning.</td>
<td>✓</td>
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<table>
<thead>
<tr>
<th>Independent group work **</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Focuses on interaction between students, co-operative learning</td>
<td>✓</td>
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<table>
<thead>
<tr>
<th>Using student experience as a learning resource</th>
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<tbody>
<tr>
<td>Setting objectives that match students’ purposes, needs &amp; levels of prior achievement;</td>
<td></td>
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<table>
<thead>
<tr>
<th>Fostering open, flexible, reflective &amp; outcomes-based assessment **</th>
<th></th>
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<tbody>
<tr>
<td>A variety of assessments self, peer &amp; teacher the criteria are made explicit, clear goals.</td>
<td>✓</td>
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<thead>
<tr>
<th>Developing learning skills **</th>
<th></th>
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<tbody>
<tr>
<td>Learning how to learn, developing study &amp; information processing skills (metacognition)</td>
<td>✓</td>
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<table>
<thead>
<tr>
<th>Evaluating teaching and learning**</th>
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<tbody>
<tr>
<td>Systematic module evaluation, develop student skills in giving feedback. Learning from students about effects of teaching. Understanding teaching as the facilitation of learning.</td>
<td>✓</td>
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<thead>
<tr>
<th>Independent learning</th>
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<tbody>
<tr>
<td>Greater autonomy &amp; control over choice of content, methods &amp; assessment</td>
<td>✓</td>
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<table>
<thead>
<tr>
<th>Problem-based learning</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Involves learning through tackling problems</td>
<td>✓</td>
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</table>

<table>
<thead>
<tr>
<th>Enhancing student capabilities &amp; work-related skills **</th>
<th></th>
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<tbody>
<tr>
<td>Developing students personal qualities transferable skills, intellectual capabilities effective management of time and people.</td>
<td>✓</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student-teacher interaction *</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Working at the students’ level, making the material stimulating, using clear explanations showing concern &amp; respect for students, high quality feedback.</td>
<td>✓</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Providing an appropriate study environment *</th>
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</table>

** Factors which are explicit in the learning outcomes-led model,
* Factors which are made explicit in context through the model
a learning resource is implicit in allowing students greater autonomy and control over the content of their learning, but it is equally possible to take cognisance of their experience and needs when specifying transferable skills and, to a certain extent, with regard to subject-specific outcomes.

Perhaps somewhat more contentious is the development of metacognitive skills which is advocated by both Gibbs and O’Neil, though not by Ramsden. Svensson (1984 b) discusses the importance of distinguishing between ‘learning skills’ as a characteristic of a learner’s performance of a learning task and ‘study skills’ which have been “generally used to refer to techniques of studying such as notetaking, underlining, summarising and so on” (1984, p. 68). As Gibbs (1992 b) has pointed out improved study skills per se do not necessarily lead to students adopting a deep approach, indeed there are reservations concerning their efficacy. It is thus ‘learning skills’ which are referred to here, which Gibbs, (1992 b, p.15) suggests can be fostered in “the context of developing a sense of purpose, an awareness of task demands and flexibility in adapting to different demands” and not study skills which are taught outside of the context of learning.

Evaluating teaching and learning and engaging in reflective professional practice are key elements in design strategies for both O’Neil (1995) and Ramsden (1990), the latter particularly emphasising the potential of ‘understanding teaching as a means of facilitating learning’. Whilst this strategy is not specifically articulated by Gibbs (1992) one dimension of the strategy, namely developing students’ skills in feedback, is implicit in Gibbs’ notion of student reflection and personal development and it also features through the transferable skills advocated in the outcome model. Unique to Gibbs is the strategy of learning through problem-solving, which is distinct from learning to solve problems. For Gibbs “the aim is to learn rather than to solve the problem....problems are simply exploited for their learning potential, after which students move on to the next problem” Gibbs (1992 b, p.14-14). This represents a particular interpretation of the use of problem-solving which does not feature in the work of Ramsden or O’Neil and or indeed in the learning outcome model.
Whilst all of the strategies included in Table 2.3 are contingent upon close student lecturer interaction, Ramsden articulates specifically those dimensions of design which relate to the descriptor of ‘good teaching’ in the Course Experience Questionnaire. Research undertaken by Ramsden and Entwistle (1981; 1983) and by Ramsden (1991b) confirm the importance of ‘good teaching’ in moving students towards deep approaches to learning, the priority accorded to this strategy by Ramsden is therefore consistent with his research findings.

2.5.2 Research into conceptions of learning
The analysis of design factors which promote deep approaches to learning, and consequently aim at improving the quality of student outcomes, has shown the extent to which the learning outcome model embodies current thinking on teaching and learning in higher education. But what has emerged from the theoretical framework discussed in detail is that the critical variable determining the quality of learning remains the students' conception of what constitutes learning in a certain context. Ramsden (1990, p. 29) summarises this theoretical and empirical work by stating that “indisputable connections have been established between students’ perceptions of assessment, teaching and the effectiveness of their learning.” In other words students respond to the situation and the signals which they perceive. Their interpretation is not necessarily congruent with what has been intended by the lecturer - it is this very gap between intention and actuality which curriculum design seeks to close. The extent to which the learning outcome-led model has resulted in a closer relationship between lecturer’s and students’ conceptions of learning is a key research question in this thesis.

In contrast to the research into approaches to learning, there is a distinct dearth of research into students' conceptions of learning. Research undertaken by Van Rossum and Schenk (1984) with first year undergraduate psychology students found that “a large number of students begin their study with a fundamentally reproductive learning conception”, (i.e. conceptions A, and B Table 2.1) and that female students have “significantly more often a reproductive learning conception” (1984, p. 79). The study also raised the question as to how people acquire their ideas about learning, and whether students who normally adopt a surface approach can be brought to use a deep
approach and if so whether this only involves changing their conception of learning or whether training aimed at developing the skills belonging to a deep approach is also required.

Examining conceptions of learning from a different perspective, Svensson and Högfors (1988) undertook research on improving education in mechanics with undergraduate students by presenting them with alternative views on what learning was required in order for them to ascertain what change in conception they needed to make. They found that lifting conceptions to a conscious level seemed to be an important stage in helping students to change and concluded that:

making the students’ conceptions, as well as the conceptions of the discipline, part of the content of teaching would seem to be the most direct way one can achieve an improvement in education (Svensson & Högfors, 1988, p. 176).

More recent research by Taylor (1993) working at Queensland University of Technology in Australia used Marton et al (1992) categories of conceptions of learning (Table 2.1) to analyse their students' statements on learning and to classify the responses in terms of the conceptions they found. Table 2.4 below shows that, “the majority of undergraduate respondents saw learning as less complex than understanding” Taylor (1994, p. 72), and that the majority of undergraduate students held an essentially quantitative view of learning (conceptions A, B, C) as discussed in Biggs and Moore (1992, p. 20). Whilst the largest category saw learning as about understanding, the proportion who saw learning as being associated with seeing something in a different way or changing as a person was quite small (Table 2.4).

<table>
<thead>
<tr>
<th>Table 2.4 Proportion of Undergraduates Expressing Each Conception</th>
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<tbody>
<tr>
<td>Conceptions of learning</td>
</tr>
<tr>
<td>Number of responses</td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>160</td>
</tr>
<tr>
<td>% for each response</td>
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<td>19.0</td>
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(Taylor, 1994, p. 72)
comparison between undergraduates' and their teachers' conceptions of learning in the study confirmed Morgan's (1993) suggestion that students are not likely to hold as qualitative a conception of learning as their lecturers.
2.7 Conclusion
This chapter has sought to locate the learning outcome-led model within the context of current trends in curriculum design in higher education. The model represents an attempt to harness the extensive body of research into student learning in context into a coherent and practical design which will have an impact on teaching and learning in higher education. Gibbs (1995, p. 23) succinctly summarises the theoretical perspective by asserting that:

the quality of student learning outcomes is affected by students' approach, their approach is affected by their conception of learning, and their conception of learning is affected by the type of teaching they experience - not the teaching and learning methods themselves so much as the underlying model of teaching and learning these methods embody.

Traditional models of teaching and learning have been based on an assumption that a direct relationship exists between what is taught and what is learned and that the learning experience which is designed brings about the realisation of the outcomes which have been stated. As Atkins (1993, p. 253) points out, from the behaviourist stance, “learning was viewed as a process of (operant) conditioning in which the instruction itself was responsible for, and directly related to, the prescribed learning outcome”. The design required the teacher/lecturer to have a sound grasp of both the desired outcomes and a detailed conception of the kind of learning experience which would promote the learning required to achieve them. It placed the teacher centre stage and was based on the assumption that knowledge and skills exist objectively and independently of the learner’s perception and understanding of them, or indeed, of the cultural contexts in which they were transmitted.

The learning outcome-led model, whilst ostensibly a form of rational planning is not underpinned by this behaviourist tradition. The fundamental difference being that the model shifts the emphasis from the lecturer who imparts knowledge, to the learner who brings a unique perspective to the task of learning and who plays the central role in creating knowledge; a shift from a behaviourist to a constructivist perspective on learning. Thus the role of the university teacher is not
just to impart knowledge, but as Ramsden (1992, p. 5) suggests “it is to make student learning possible”. One of the ramifications of this perspective is that the lecturer and the learner share responsibility for the outcomes of learning; the outcome-led design model translates these responsibilities into a practical design for learning.

The model (Figure 2.6) is essentially concerned with the unequivocal articulation of what constitutes learning in a given context; it thereby seeks to achieve congruence between the lecturer’s and the students’ conceptions of learning. Subject specific and academic outcomes are augmented by the inclusion of explicit personal transferable skills which are deemed to be an essential component of mass higher education in the 1990s.

The model emphasises a coherent and holistic approach to curriculum design and is underpinned by current research into student learning and the relational perspective on learning discussed at length within this chapter. Whilst acknowledging multiple influences on the way students perceive what counts as learning, the model focuses on those elements of curriculum design which are in the control of the lecturer; namely the specification of learning outcomes, the learning context and the assessment tasks and criteria. The design process begins with the specification of the desired learning outcomes; hence their position at the apex of the model. The clarity of their expression, in language which is meaningful to the learner, and their statement regarding the expected outcomes of learning, for example in terms of deep understanding, critical analysis, independent thought, or personal transferable skills, are vital in signalling to the learner how the lecturer perceives learning in context. The assessment tasks and criteria derive from, and are thus congruent with, the learning outcomes and together they define for all learners what the activity of learning actually involves in a given module/course. The statement of outcomes and the assessment régime are clearly expressed to minimise misperception and mismatch between the lecturer’s and students’ conception of learning. The latter is crucial in determining the approach to learning that is adopted and the outcomes that are subsequently achieved. Thus the model might be termed a systems
model in which the component parts "interact with each other to form an equilibrium" (Biggs, 1993, p. 449).
Chapter 3
The Research Design

3.0 Introduction

The overall aim of this thesis is to identify the conceptions of learning held by students on traditional and outcome-led designed modules and to explore and specify the design factors which shape these conceptions and then to consider to what extent they are embodied in the learning outcome-led model. The study is concerned with the effects of curriculum design on student learning; the research approach and methods have been chosen with this in mind. The predominant approach is that of phenomenography which was adopted in the seminal Gothenburg work which provides the predominant theoretical perspective of this thesis (Säljö, 1979, 1988; Marton, 1981, 1988, 1995; Marton, Hounsell and Entwistle; 1984; Marton and Säljö, 1976, 1984; Marton et al, 1992). This research into student learning eschews a quantitative approach based on assumptions about cause and effect, but rather seeks understanding which is derived solely from the analysis of students' descriptions of what learning means to them. Within this thesis this approach is adopted with respect to the research questions relating to students' conceptions of learning but it is complimented by the use of quantitative analysis techniques to facilitate the analysis and reduction of the data concerned with the design factors influencing student learning. The use of quantitative techniques also provides data to judge the relative strengths of relationships between variables; an outcome which is not facilitated by qualitative analysis.

The context for this research is the module experience resulting from the teaching of 'traditional' modules and the introduction of an innovative model of curriculum design. The two approaches of interpretivism, more specifically phenomenography, and positivism are drawn upon cyclically in the iterations of this study; they both contribute towards the eclectic perspective which characterises this thesis.
3.1 Research paradigms
There is still a widely held view amongst educational researchers that there are, "two opposing ways of making sense of social reality" (Hitchcock and Hughes, 1994, p. 14), that there is a dichotomous relationship between positivism/quantitative methodology and interpretivism/qualitative methodology (Bassey, 1991, Cohen and Manion, 1995, Bell, 1987) but there is no intention to rehearse these well-aired arguments in this thesis. Rather than perceiving the two paradigms as being divided it is suggested that they are diametrically opposed along a continuum which is identified by positivism at one extreme and interpretivism at the other. This research is located towards the interpretivist paradigm along this continuum.

Interpretivism is a perspective from which reality is perceived as a construct of the human mind such that there can be different interpretations of what is real and, in consequence, no one reality which exists irrespective of individuals (Bassey, 1991). The interpretive researcher acknowledges that differences in perception and interpretation of phenomena are a corollary of a constructivist epistemology. Research is perceived as a process of describing interpreting and seeking understanding and possibilities in order to reach a shared meaning and not as a search for causal relationships which epitomises positivism. The subject of interpretivist research is the study of individuals' attitudes, perceptions and interpretations which, in this thesis, represent the essence of students' conceptions of learning in specific modules and their beliefs about the design factors which influence the development of these conceptions.

Interpretivist researchers see language as the means of communication in which there may be differences in nuance of meaning, rendering the analysis of social discourse potentially problematic, but nevertheless they reject the positivists' view that objective, quantitative data informs their inquiry. The data in this research are entirely language-based notwithstanding the attendant issues in reliability and validity. But pure interpretivist research uses verbal data which is analysed solely by means of qualitative methodology and not by the statistical techniques favoured by positivists. Herein lies the deviation from 'pure' interpretivism in this research design which incorporates the use of
quantitative methodology to analyse what are essentially qualitative data. The qualitative data informing research questions:

1. To what extent were students aware that they were studying a learning outcome-led module?

2. To what extent were students aware that there were different types of learning outcomes in their modules?

5. To what extent is there congruence between students' and lecturers' perceptions of what learning involves in learning outcome and in traditionally designed modules?

are analysed using percentages. Whereas the data gleaned from the Likert scale questionnaire (5.5.3) to inform question 6 (What are the curriculum design features influencing students' perceptions of learning on the traditional and outcome-led modules?) are explored by means of the process of factor analysis.

But whilst the methodology used in this research may be said, in part, to be drawn from positivism, the social context of the enquiry and the epistemological assumptions which underpin the issue firmly locate it within the interpretivist paradigm. The study can be said to be positioned within the domain of eclecticism, for whilst the issue is situated within the interpretivist pole of the continuum, the methodology is drawn from the opposite pole of positivism.

Numerical data and words both have a place if the complexities of student learning are to be fully explored. As Miles and Huberman, (1994) suggest the question is not:

Whether the two sorts of data and associated methods can be linked during study design, but whether it should be done, and for what purposes (P. 41).

Rossman and Wilson (1985, 1991) suggest that there are three broad reasons why qualitative and quantitative methods might both be used in a research design: (a) to enable confirmation or corroboration via triangulation; (b) to elaborate or develop analysis by providing richer detail; (c) to initiate new lines of thinking through attention to surprises or paradoxes to provide fresh insight. They perceive quantitative and
qualitative techniques as having complimentary strengths such that the former are most appropriate for "corroborating findings initially noted from qualitative methods" and the latter being best used to "provide richness or detail to quantitative findings (elaboration)" (1984, p. 633). They also suggest that the methods can be used iteratively but that qualitative methods should precede quantitative ones "when clarifying the direction of the inquiry" (p.633). Qualitative methods were used in this study initially for exploration through focus groups interviews (Figure 3.1) then to deepen the initial findings through the use of further focus groups interviews and conceptual map surveys. This was followed by a survey to corroborate findings which were tested and further probed through in-depth interviews.

Figure 3.1 The Linkage Between Qualitative and Quantitative Data in the Thesis

(QUAL (exploration) → QUAL (deepen) → QUAN (corroborate) → QUAL (deepen, test findings))

(After Miles and Huberman, 1994, p. 41)

The research design is thus, in Rossman and Wilson's words 'shamelessly eclectic' (1991), based on the premise that no one paradigm can tap all the parameters of the research questions. This does not imply that the study is equally rooted in both interpretivism and positivism but, rather that the most appropriate paradigm and attendant methodology has been drawn upon at different stages in the study.

The underlying epistemological perspective is one in which learning is perceived in terms of what is inside the students' minds rather than that which what resides in a text book, a data file or academic journal. Laurillard (1993) refers to it as a relational view of learning which assumes that knowledge is not about describing:

what is known about x, as a natural scientist would, but how the idea of x can be experienced, where the relation is between knower and object (p. 35).
The position is thus that there is no one view of reality but there is always what Säljö (1988) refers to as "a 'filter' through which the world is seen if it is to be meaningful" (p.36) resulting in rich varieties of conceptions of reality of phenomena. The approach, grounded in this epistemological stance, known as 'phenomenography' will now be considered in more detail.
3. 2 Phenomenography

The term 'phenomenography' was first proposed by Marton (1981) as a hybrid from phenomenology and ethnography which aims at the "description, analysis and understanding of experiences (Marton, 1981, p. 177) and at revealing "the qualitatively different ways in which people experience or conceptualise various phenomena in the world around them" (Marton, 1995, p. 7). It is research which is directed towards what Marton, (1981, p. 180) refers to as 'experiential description' and as such represents a distinct form of enquiry which does not focus on what respondents know but on 'how they use knowledge to interpret reality' (Biggs, 1989, p. 22). This concern with how the world is construed by actors is referred to by Marton as a 'second-order or experiential perspective' as opposed to the 'first-order perspective' in which the orientation is towards the world per se about which statements are made. Phenomenography is thus based on two principles:

i. that individuals do not have specific conceptions of reality which it can be assumed they will always adopt, in Säljö words "conceptions of reality are not construed as residing within individuals" (1988, p. 42);

ii. context is integral to the way in which an individual makes sense of reality, thus "conceptions are conceived as relational phenomena rather than inherent qualities" (Säljö, 1988, p. 42).

In terms of educational settings phenomenography explores how concepts, principles and phenomena are perceived, experienced and understood in specific contexts and is thus concerned with the direct exploration of students' experiences of learning (Entwistle, 1984). In this research this means describing learning from an analysis of students' descriptions and perception of what learning means to them in a given module. This represents a shift from the traditional first order perspective, which has focused on the researcher looking at the learners' behaviour, to this second order perspective in which the world is described as seen by the individual learner. But the study also focuses on an in-depth analysis of the explanations given by lecturers as to how they perceive learning in the context of the module which they have created. Because both students and lecturers can be said to be actors who have their own interpretations and make sense in their own terms of the learning environment they experience, the study of the
perceptions of both of these groups of actors falls into the second order perspective described by Marton (1981). Thus phenomenography can be said to inform the methodology adopted in the following key research questions:

3. What are students' conceptions of learning in the learning outcome and traditional designed modules?

4. To what extent do students have a more sophisticated conception of learning when studying learning outcome as opposed to traditional modules?

5. To what extent is there congruence between students' and lecturers' perceptions of what learning involves in learning outcome and in traditionally designed modules?

In order to inform question 3 a phenomenological approach was adopted, students being asked to describe how they perceived learning in a given module, in questions 4 data gleaned from this second order perspective was used as a basis for a comparison in hierarchical terms between how learning was perceived in different modules. Similarly the data which informs question 5 is predominantly phenomenographical, having been gleaned from the responses to question 3, but these data then form the basis of a comparison between the students' and lecturers' perceptions of learning within specific modules.

The design of this study draws heavily on phenomenographic methods to yield data, some of which is analysed using quantitative methodology and some using qualitative methods. The research is not dictated by any one paradigm, rather the nature of the issue determines the approach which has been adopted; the study can thus be said to be issue-led rather than paradigm-bound.
3.3 Case Study
Regardless of the approach adopted, the research is unequivocally a case study according to Adelman et al's (1977) definition:

an umbrella term for a family of research methods having in common the decision to focus an enquiry around an instance (p. 140),

and to Yin (1993) who states case studies are appropriate "when the phenomenon understudy is not readily distinguishable from its context" (p. 3). A case study is essentially a rigorous, systematic and in-depth study of a singularity, an account of particular events, an enquiry around an instance (Bassey, 1990) or a series of cases. The concept of a case study does not determine any one paradigm or method for both are selected according to their appropriateness in relation to the declared research issue and not according to any predetermined ontological and epistemological assumptions which are necessarily bound up with the notion of a case study. This research is concerned with students' conceptions of learning in one undergraduate discipline or 'subject' and it is based on their experience of traditional and an innovative curriculum design which is unique to the institution. It may be thus classified as a singularity.

Whilst acknowledging that the major feature of case study is its 'concentration upon a particular instance', Hitchcock and Hughes (1994, p. 214) go further and propose seven characteristics which such a study is likely to have:
1. A concern with the rich and vivid description of events within the case;
2. A chronological narrative or description of events within the case being studied and leading up to the case;
3. An internal debate between the description of events and the analysis of events described;
4. A focus upon particular individual actors or groups of actors and their perceptions and accounts;
5. A focus upon particular individuals and particular happenings within the case;
6. The integral involvement of the researcher in the case;
7. A particular mode of presentation that is able to capture the parameters of the case.
This thesis has all of these seven features, with a very strong emphasis on (4) and (5) relating to students' perceptions of learning and the design factors which shape these perceptions.
3.4 Generalisability

The distinctive features of a case study, namely the fact that it is a singularity, initiates debate about the extent to which the research findings which ensue from such a study can be said to be generalisable. Indeed Bassey (1990, 7.1) suggests that "the most important dichotomy in educational research is between search for generalisation and study of singularity" and not between paradigms. Because of the nature of a case study it does not necessarily purport to collate findings which can then be extrapolated to a larger population for the purposes of prediction, but it can be used to undertake a critique of existing theories and models. Whereas quantitative researchers seek large numbers of random samples, qualitative samples tend to be purposive (Kuzel, 1992), consequently the choice of respondents is driven by a search to illuminate the constructs being explored rather than to seek representativeness. As Miles and Huberman (1994,) suggest the appropriate strategy in determining respondents might well be for maximum variation which "involves looking for outlier cases to see whether the main patterns still hold" and that "searching deliberately for confirming cases, extreme cases or deviant cases, and typical cases serves to increase confidence in conclusions" (p.28). Within this study the respondents were not selected on the grounds that they provided a representative sample: the focus group respondents and the staff who were interviewed were chosen because of their experience of specific modules; and the students who were interviewed in depth were selected because they were discrepant respondents who held 'misconceptions' about learning in their modules - 'misconceptions' in relation to the way in which their tutors perceived learning in the module - they were 'outlier and deviant cases' who were specifically explored to investigate why there were two clusters of respondents and why the outcome-led design had failed to influence how they perceived learning in their module (see 5.7.3). Multiple-case sampling was also undertaken by looking at a range of similar cases from different outcome-led modules and at a range of contrasting cases from the traditional modules. It was thus possible to understand where and how students' conceptions of learning differ from that of their lecturers and why this was so. Yin (1991) suggests that such sampling adds confidence to findings through what he terms a 'replication' strategy which serves to strengthen the precision, validity and stability of the findings. It might be argued that
qualitative case study research does not seek to suggest generalisations from one sample to a population, but rather to suggest analytic generalisations relating to generic processes and new or existing theories (Firestone, 1993). The more multiple case sampling takes place the more there can be confidence that the emergent theory is generic because it has been seen to be replicated - or not - in predictable ways (Miles and Huberman, 1994).

The same issues do not arise with respect to the data relating to the design factors which influence how students perceive learning which were examined using the quantitative statistical method of exploratory factor analysis. In this type of analysis the aim is to map out the whole field including as many of the variables as possible in the sample. Thus a sound rationale for choosing the variables is important, because, as Kline (1994) points out "the factors which emerge from the factor analysis are affected by the samples from whom they are obtained" (p.72). Homogeneous samples lower the variance and consequently the factor loadings, conversely heterogeneous samples increase the variance. In this study a heterogeneous sample was used comprising students studying both traditional and outcome-led modules who were asked what features of module design influenced the way they perceived learning in a given module (see Figure 3.2) through the focus group interviews and the conceptual map surveys.

**Figure 3.2 Sample Source for Design Feature Variables**

<table>
<thead>
<tr>
<th>Focus Groups</th>
<th>Conceptual map surveys</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Traditional</td>
</tr>
<tr>
<td>Pilot study</td>
<td>10</td>
</tr>
<tr>
<td>Main study</td>
<td>29</td>
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At the pilot stage 20 students were interviewed in a focus group: 10 from a traditional module and 10 from a learning outcome-led module; each of these students also completed a conceptual map survey (see 3.5.2) In the main study 63 students: 34 from learning outcome-led modules; and 29 from learning outcome-led modules were interviewed in focus groups and each student again completed a conceptual map survey. The results of these interviews are presented and discussed in
5.6.1. Variables which related to specific features of the outcome-led model were also included in the sample.

The adequacy of the sample size was based on Kaiser's categories (1974) and Kaiser-Meyer-Olkin measures of sampling adequacy. Both Gorusch's (1983) minimum sample criterion and Arrindel and Van der Ende's (1985) criterion for the ratio of sample size to emergent factors were also applied. The results of these measures are discussed in 5.6.1.

The findings in respect to the emergent constructs which influence how students perceive learning are soundly based on a combination of qualitative and quantitative techniques and complimentary research paradigms. Whilst the qualitative methods preclude generalisability from sample to population, confidence in the generic nature of the emergent constructs has been enhanced by the multiple method approach which has been adopted. Having discussed the research approach, the data collection instruments will now be considered in detail.
3.5 Data Collection Instruments

Figure 3.3 illustrates the overall design of this study. The data collection instruments comprise:

i focus group interview;
ii conceptual mapping survey;
iii questionnaire;
iv interview.

3.5.1 Focus group interview

A focus group consists of more than two interviewees who are interviewed at any given time. They are not multiple single interviews but are conducted to:

facilitate a comprehensive exchange of views in which all participants are able to speak their minds and respond to the ideas of others (Walker, 1985, p. 5).

Interaction between participants is more important than that between the interviewer and interviewee because group members exercise influence over each other by responding to comments and ideas and thus the interaction:

not only discloses what is important to individual respondents, but it attempts to provide a situation where the synergy of the group adds to the depth and insight (Anderson, 1990 p. 241).

The focus group interview was chosen as the most appropriate data collection instrument for an in-depth exploration of the design factors influencing how students perceive learning. As this is an issue about which little was known the focus group was seen as a way of bringing together participants who had shared the same experience, but who held differing opinions and perspectives. Hedges, (1985) suggests that focus groups are particularly useful where understanding and insight are sought because the diversity of opinion found within the group:

often helps people to analyse their own attitudes, ideas and beliefs and behaviour more penetratingly and more vividly than they could easily do if just alone with an interviewer (p. 73).
Figure 3.3 Research Design

Define conceptions of learning, relational view of learning, learning outcomes and discuss learning outcome assessment and 'good' design factors all in relation to previous work.

Write learning outcome design model, rewrite 3 modules in learning outcome form, deliver modules.

Conduct & analyse 2 pilot focus group interviews and pilot conceptual map surveys at levels 1, 2 and 3 to identify the design factors which influence how students perceive learning and to identify students conceptions of learning.

Conduct interviews with tutors to identify the features influencing students' perceptions of learning & to ascertain their own conceptions of learning for their modules.

Conduct 6 focus group interviews and the conceptual map surveys.

Devise and pilot versions of likert type questionnaire on the design factors which influence students perceptions of learning and the conceptions of learning questionnaire.

Conduct both main questionnaire surveys of 161 students.

Conduct a factor analysis of the likert type responses using SPSS to identify emerging constructs of design factors.

Conduct interviews with 5 students to explore the replicability of the Likert responses & the validity of the constructs.

Analyze conceptions of learning in relation to Marton et al's taxonomy.

Analyze in relation to emergent constructs of design factors and hypotheses about the development of conceptions of learning using Nu.Dist.

Conduct in-depth interviews with 8 students holding mis-conceptions of learning.

As the research progressed the use of the groups also served as a process of multiple sampling where ideas and emergent variables from early groups could be explored with subsequent ones.

Watts and Ebbutt (1987) suggest that focus groups can be used to raise issues which are to be researched through a questionnaire to indicate the range of responses expected. This function is applicable in this study where the focus group facilitated the piloting of questions relating to students' awareness of module design (Appendix 10) and to ascertain whether the students were able to articulate their views on learning sufficiently precisely to inform the research on conceptions of learning which had been proposed.

Whilst there is some debate about the optimum size of a focus group ranging from 6-12 (Anderson, 1990); to 6-7 (Hedges, 1985); to 6-9 (Krueger, 1994) to 8-12 (Stewart and Shamdasani, 1990), the number of respondents in each group in this study varied from 9 -12. Krueger (1994, p.17) suggestion that it "should be small enough for everyone to have opportunity to share insights and yet large enough to provide diversity of perceptions". The group sizes in the study were adequate to achieve these both these purposes.

The focus group respondents were taken from students studying both learning outcome and traditional modules but they were asked to consider specifically the design features which had influenced their perception of learning in the modules they were studying at the time of the interview. But, as all of the respondents had, at some time, taken both traditional and outcome-led modules, this shared experience facilitated the identification of features which were salient in each design. The interviews were conducted using the schedules given in Appendix 10 and 11 which were based on Krueger's (1994) suggestions on how to conduct a focus group. They were all recorded and a 'scribe' was enlisted from the group to record non verbal communication and specific responses which appeared to represent a consensus or atypical opinion. The complete interviews were all transcribed on to disk.
3.5.2 Conceptual mapping survey
The conceptual map surveys (Figure 3.3) allow participants in a focus
group to consolidate their thoughts in respect of a specific issue or
question which has been the focus of discussion. The technique serves to
counter the control extrovert participants may have over the group by
affording all members of the group to record their thoughts.
Respondents are asked to reconsider the responses that they have made,
or thought of making, in the light of the ideas presented by other
members of the group. The technique, advocated by Krueger (1994, p.
62) involves giving participants a piece of paper which contains 6
squares (Appendix 12), and terminating the discussion for five minutes
to allow the group to classify their responses in the cells on the grid.
The question which they were asked to consider was 'What has
influenced how you have come to make your judgement about what
learning is in this module?'. The responses were then discussed by the
group and the reasons why the categories were created were explored.
Thus it was possible to pursue differences and commonalities and also to
glean a rationale for the classifications for the groupings within the cells
and the presumed relationship between them. Participants were allowed
to make changes to their grids during the discussion but they were not
prevailed upon to do so. The data from the conceptual mapping survey
provided detailed information about the design features which
influenced students' perceptions of learning and generated variables to
be included in the questionnaire.

3.5.3 Questionnaire
The main justification for using a questionnaire in any piece of research
is that they offer an extremely rapid and confidential means of
collecting a large number of fairly detailed responses. In this study a
questionnaire was chosen because it was deemed to be the most
appropriate data collection instrument to gain such responses from
moderately sized sample of participants on both learning outcome-led
and traditional modules in the most effective way. The respondents were
not chosen specifically but were those students who were present at the
timetabled session for teaching week 8 out of a 15 week module. The
questionnaire was designed to included questions relating to students'
awareness of the outcome-led design; to their perception of learning in
the module they were studying at the time of completing the
questionnaire; and a Likert scale relating to the design features which influence students' perceptions of learning (Appendix 13).

The feasibility of asking detailed questions about student learning had been probed through the focus group interviews and had been confirmed by the piloting of the questionnaire. Access to data on the learners' perspectives on learning is a necessary requisite of a phenomenographic approach to understanding how learners engage with and react to educational settings. It was brought about by asking students to make a statement in which they shared their beliefs about learning with the researcher. The wording of the statement was based on the invitation to learners given by Taylor (1994) with the explicit intention of facilitating a replication study which would legitimise comparison between Taylor's findings and the findings of this study in respect to the students conceptions of learning. Students were asked to respond to the following statement:

_I want you to focus on this module and write about a page on your ideas about learning in this module. Please consider:

i what you actually mean by learning, what you think learning is in this module;

ii what you know about your own learning in this module;

iii how you actually go about learning in this module;

iv how you know you have learned something in this module.
_There are no right answers, I am interested in your perceptions related to learning in this module.

The Likert type attitude scale was constructed from the findings from the focus group interviews, the conceptual mapping survey and the interviews with module tutors which cited specific features of the design of modules which were perceived as influential in determining how students construed learning in a given module (See Figure 3.3 and 5.6.1). The principles which underpin the design model were all reflected in these findings such that no additional items were included which related solely to the theoretical model; all the variables were grounded in the experiences of students and their tutors. The range of variables included in the questionnaire was justified on the grounds that "in exploratory analysis it is essential to sample variables as widely as possible" (Kline, 1994, p. 11-12). The inclusion of any one variable
does not necessarily result in it being loaded on any construct, whereas the omission of a variable necessarily precludes it from so doing.

3.5.4 Interviews
The use of in-depth interviews complemented the focus group interviews the different forms having complementary strengths and weaknesses. Two groups of respondents were interviewed (see figure 3.3), both were elite interviews, all interviews were semi-structured, all were recorded and transcribed on to disk.

The lecturers teaching the traditional and outcome-led modules were specifically chosen in order to ascertain how they perceived learning in their module, the design features which they felt influence students' perceptions of learning, the extent to which they saw learning as being closed down by the design of their module and, in respect to the outcome-led modules, the extent to which they believed their students were aware of the module design (Appendix 14). Whilst the data relating to the 'closing down' of learning were subsequently adjudged to be superfluous to the research questions posed in the study, the data on lecturers' conceptions of learning and the awareness of the design are integral to the study. The level 1 and level 3 traditional module lecturers were interviewed individually whilst the three tutors on the level three traditional module were interviewed together. Three tutors on the level 1 outcome-led module were interviewed, but separately, as were the tutors on the level 2 and level 3 outcome modules. Thirteen students from the level 1 outcome-led module were interviewed in-depth. Five of the students were chosen because their responses to the Likert scale were ranked either low or high on terms of the constructs which were retained from the factor analysis. Their interviews were used to check the replicability of their responses and the validity of the constructs (5.6.7).

The remaining eight interviewees were taken from a group of respondents who held a conception of learning in the module which was not consistent with that of their tutor, but which was part of the second cluster of respondents who held a conception B of learning in the level 1 module (5.5.2). The interviews were used to check the validity of the categorisation of their conception of learning gleaned from their learning statement; to check the validity of their statements regarding
awareness of the outcome-led design and their responses to the Likert attitude scale taken from the questionnaire; and to probe into what influenced the way they saw learning in the module and the extent to which they had responded to the module design (Appendix 15). Four out of these eight interviews were subsequently analysed. It was thus possible to take the constructs which had been identified by the factor analysis and the emergent theories regarding learning outcome-led design and consider them in terms of the students' learning-in action. Miles and Huberman, (1994, p. 29) suggest that to get to a construct a researcher needs "to see different instances of it, at different moments, in different places and with different people"; the in-depth interviews served to facilitate this.

3.5.5 Piloting of the data collection instruments
Piloting of the data collection instruments was undertaken at two stages in the research(Figure 3.3). The group interview questions (Appendix 10 & 11 ) and the conceptual mapping survey (Appendix 12) were piloted in two focus groups which included 20 students; 10 from a traditional module at level 1 and 10 from a learning outcome-led module which was taught at both levels 2 and 3. The sample thus included students from all three undergraduate levels and from both types of modules. The pilot interviews revealed that students held distinct conceptions of learning in their modules which they were very able to articulate. Few of them had previously considered what influenced how they came to hold these beliefs and this meant that the discussion relating to the design factors was very demanding, but feasible. The original question referred to design features, but this was not understood by students and had to be explained in the first focus group. A respondent in the second group suggested that the interviewer should ask what gave students clues about learning was about and another how they decided what learning was about in the module - both of these suggestions were included in the interview schedule for the remaining focus groups. It was anticipated that question 2 of the schedule for the outcome-led modules What types of outcomes are you expected to meet in the learning outcome module? might not be understood by respondents, but these fears were proved to be unfounded. All focus group respondents were able to differentiate subject specific and transferable skills, but the response in respect of generic academic outcomes was far more limited. This was not deemed
to be because the question was not valid, but rather to reflect the way in which the students engaged with the module design and the question was therefore retained in the main study. The conceptual mapping exercise was readily understood and completed by students in the focus groups and no changes were made to this instrument (Appendix 12).

The second stage in the piloting involved the questionnaire (Figure 3.3) which was piloted with 27 students; 13 at level 1, 7 at level 2 and 7 at level 3. The level 1 students were taken from a traditional module and the level 2 and 3 students from learning outcome-led modules. The layout of the learning statement was changed as a result of piloting: more space being given for responses; and the words 'Please check that you have tried to write something for each part of this question' were added at the bottom of the statement to encourage students to address each part of the learning statement. The order of the questions was altered, the learning statement being brought forward so that it was addressed by students at the beginning of the questionnaire. Question 5 of the learning outcome-led questionnaire was also modified to include the names of the different types of outcomes to illuminate the phrase 'types of outcome' (See Appendix 10), some doubt was cast on the validity of the earlier form of the question because 3 respondents out of the pilot sample of 27 misinterpreted the meaning of 'type of outcome'. Question 6 of both questionnaires was modified to include percentages to quantify the time spend on achieving the outcomes or the module objectives. The Likert scale questions were reduced as a result of the piloting. The statement 'It was only after I received my first assignment back that I realised what learning was required in this module' was deleted because some respondents had not yet received their first assignment back, yet they still gave a response. This meant that it in a larger sample it would not be possible to judge the validity of the responses to this variable. The item I use the self-assessment exercise after I have done my assessment' was also deleted because self-assessment had only been completed by students studying the learning outcome-led modules and the completion rate of the exercise in one of these modules was limited. Thus it was felt that the data relating to this item would not necessarily be valid, for students are often tempted to complete an item even if it does not apply to them, and because the data gathered would not have been comparable across modules.
3.6 The analysis of the data
Both qualitative and quantitative methods, inductive and deductive, methods were used to analyse the data, reflecting the eclectic approach which characterises this thesis (3.1). Inductive methods were used particularly during the early stages of the research to explore the data relating to the design features which influence how students perceive learning. This was unfamiliar ground in which there was a lack of well-delineated concepts and constructs and where the research was seeking to identify patterns and discern variables. On the other hand, deductive methods were used to categorise conceptions of learning, where the method of analysis was informed by categories of conceptions of learning which had been identified by previous research. It is this deductive form of analysis which will be first considered in detail.

3.6.1 A taxonomy of conceptions of learning
The taxonomy of conceptions of learning first identified by Säljö (1979) was derived from research carried out within the framework of the phenomenographic approach in which "transcripts of students' descriptions of learning are read and reread until emergent qualities of students' experiences are consistently identified" (Entwistle and Ramsden, 1983, p. 134). The categories were not guided by hypotheses derived from previous research, but were grounded in the constructs which emerged from the interviews undertaken and analysed by Säljö. Once verified by several judges and replicated and extended by Van Rossum and Schenk, (1984); Giorgi, (1986) and Marton et al, (1992,) the categories of conceptions of learning have now taken on the mantle of a taxonomy of conceptions which has become a tool for the deductive analysis of data about the way students perceive learning. This taxonomy (Appendix 5) provided the framework for the analysis of students' and lecturers' perceptions of learning.

3.6.2 Factor Analysis
In contrast to the analysis of perceptions of learning, the data relating to the design features which influence how students perceive learning were reduced and explored using factor analysis, a technique which is ideally suited to determining "the nature of underlying patterns among a large number of variables (Cohen and Manion, 1995,p. 330). Factor analysis can be used to facilitate the exploration of underlying structures and
relationships between variables, to reveal constructs previously unknown (Kline, 1994) - exploratory analysis or to test hypotheses derived from previous studies - confirmatory analysis. The former was used in this study to answer the research question 'what constructs can account for the correlations between the design features?'. The factor analysis serves to reduce and simplify the data gleaned from the Likert scale in the questionnaire.

The factor model chosen was principal component analysis which Ford et al (1986, p. 294) suggest is the most appropriate when "the researcher is interested in maximising the ability to explain the variance of the observed variables". In the common factor model common factors have to be estimated from actual variables, whereas in the principal components method the factors are combinations of actual variables (Kline, 1994, p. 44). The factors were rotated to increase the load on some items and to decrease it on others making them easier to interpret and to increase the meaningfulness, reliability and reproducibility of the factors (Weiss, 1976). Varimax orthogonal rotation was selected which produces factors which are statistically uncorrelated. Bryman and Cramer (1990) suggest this provides the minimum number of factors to account for the relationship between variables. Orthogonal rotation was selected because it produces simpler conceptually clearer factors which are more amenable to analysis than those produced by oblique rotation (Ford et al, 1986); this was deemed to be more appropriate for this study. The factor analysis was carried out using the Statistical Package for the Social Sciences (SPSS) version 6.1. with data imported from an Excel spreadsheet version 4.0.

3.6.3 The analysis of the qualitative data
The collection and analysis of qualitative data was spread throughout the study (Figure 3.2) in an iterative process. Huberman and Miles suggest that "when a theme, hypothesis or pattern is identified inductively the researcher then moves to verification mode, trying to confirm or qualify the findings" (1994, p. 431). This corresponds to the 'grounded theory' approach (Glaser and Strauss, 1967) mixing inductive and deductive analysis and, sometimes combining qualitative and quantitative data but always emphasising the development of theory. This form of data analysis strives towards the constant verification and modification
of emergent hypotheses and theories throughout the research which is characterised by "a general method of constant comparative analysis (Glaser and Strauss, 1967, p. vii). Comparison is facilitated by the use of coding which in itself is a form of analysis in which "data are broken down into discrete parts, closely examined and compared for similarities and differences and questions asked about the phenomena as reflected in the data" (Strauss and Corbin, 1990, p. 62).

In this study the analysis of the focus group and interview data was facilitated by the use of the computer package Non-numerical Unstructured Data Indexing Searching and Theorising (NU.DIST) power version 3.0 for Macintosh; a programme designed to aid the processes of indexing searching, theorising, and managing qualitative data analysis. Since the programme is not linked to any one theoretical stance or methodological perspective it supports and speeds up the development of the researcher’s own pattern of coding linked to the framework of the study. At the heart of the programme is the index system which is the starting point for the analysis. This comprises a hierarchical tree structure in which the codes are conceived as branches referred to in NU.DIST as 'nodes'. Coding is a process of indexing the imported text and assigning segments of the text to a node. Thus the text is analysed in terms of the coding system, the text being assigned to the codes rather than the codes to the text. Each code, or node, holds the text which has been ascribed to it together with a reference to the original source. Nodes, to which memos can be attached, are identified by both an address and a title. The full text transcripts for the focus groups interviews, the tutor interviews and the in-depth interviews were introduced into NU.DIST as documents and analysed using the nodes which had been created (Appendix 16). The start codes for the analysis, derived directly from the research questions. These codes are at the top of the tree (Figure 3.4) and represent the most general categories: outcome relating to features of the outcome-led modules; design relating to the design factors influencing student perceptions of learning in the outcome-led modules; concepts relating to students' conceptions of learning in the modules; tradit relating to features of the traditional modules. Congruence was added after the initial start codes as it was emerging as a specific design factor which was significant in influencing how students perceived learning in the outcome-led modules.
and its in-depth exploration was supported by the coding. Congruence might have been added as a child (sub-node) of (2) design factors, but as this node was becoming complex (Appendix 17) it was decided to create a new node (5). In retrospect this might not have been an entirely appropriate decision as subsequently text units were, at times allocated to both nodes within (2) design factors as well as (5) congruence. As design factors became apparent which related to the traditional modules these were included within node (4), as a 'child', (4 3) - see Appendix 16, rather than as part of node (2) design factors.

The indexing structure in NU.DIST is capable of being built and modified as the analysis progresses and as relationships between nodes become apparent to the researcher. The highest order codes, those at the top of the tree, remain the most general, whilst more specific second and third level nodes are created as categories emerge (Appendix 17). As Weitzman and Miles (1994) suggest, working within this hierarchical structure forces the researcher to think about the relationship between and among the codes. This process of modification of the index system supports the building of theory which NU.DIST serves to facilitate. This is further enhanced by the possibility of writing memos which may be connected to either nodes or to documents, or to both, and which allow the researcher to show that either a code or specific text unit are instances of a concept or hypothesis that is emerging. NU.DIST also supports system closure by
allowing "growing nets or hierarchies of concepts, evidence links, groupings of ideas, and so on" (Richards and Richards, 1994, p. 449) to become part of the data by creating nodes in which they are held.

Computer packages have thus been utilised extensively in this study as tools to support the analysis of both the qualitative and quantitative data, but the use of neither SPSS or NU.DIST can assure the reliability and validity of the data. It is these two facets of the research design that will now be considered.
3.7 Reliability and Validity
The fundamental nature of research issues which draw on methodologies from both the positivist and interpretivist paradigms present different conventions in terms of the techniques that may be employed to assure reliability and validity of the data. Clear strategies exist for the analysis of quantitative data whereas such methods are not so well formulated in respect of qualitative data for which methods are sought which are credible and replicable in interpretivist terms. Miles (1979, p. 591) suggest that for the latter there are "few guidelines for protection against self-delusion, let alone the presentation of unreliable or invalid conclusions to scientific or policy-making audiences", the challenge is therefore to work at ways of ensuring that "an 'earthy', 'undeniable', 'serendipitous' finding is not, in fact wrong".

3.7.1 Reliability, dependability and auditability
The underlying issue in respect to the reliability of the findings is whether the study is internally consistent and reasonably stable over time and whether appropriate 'quality control' procedures have been carried out (Goetz and LeCompte, 1984; Smith and Robbins, 1984) relating to reliability, dependability and auditability.

Whilst the nature of the data in this study is essentially qualitative, quantitative methods, notably in the form of factor analysis, have been used to reduce and analyse the responses to the Likert attitude scale relating to the design factors which influence how students perceive learning. The issues in terms of 'quality control' of the factor analysis are well documented (Kline, 1994; Bryman and Cramer, 1990; Ford et al, 1986) and relate to the extent of the consistency over time of the correlations between the variables; the selection of the number of factors to be rotated; and the selection of the appropriate number of factors to be retained. To maximise the reliability of the correlations between the design feature items, it is necessary to have both an adequate sample size and as large a subject to variable ratio as it is possible to achieve. The conventions in respect of both of these were applied with satisfactory results (see 5.6.1). In order to select the number of factors to be rotated, SPSS, by default uses the criterion of rotating factors with an Eigenvalue of more than 1 (see 5.6.3). Whilst this default solution can be overridden, it was deemed to be satisfactory given the size of the sample. Both the Kaiser-criterion and the Scree test
(Cattell, 1966) were used to decide on the number of factors to be retained (see 5.6.3). Kline (1994) suggests that whilst there is agreement amongst factor analysts that Cattell's test provides the best solution, one objection to it is that it is subjective; the agreement between the researcher and two supervisors about the number of factors to be retained serves to counteract this by providing a high level of inter-scorer reliability.

'Quality control' issues relating to the qualitative methods used in the study are not so readily identifiable. Miles and Huberman (1994) suggest ten questions which can be usefully addressed to guide relevant queries (Appendix 18) and which have been addressed in this study. The research questions (1), the research design (Figure 3.3), the paradigms (3.1) and analytic constructs (3.6) have all been clearly stated. The design of the study as shown in Figure 3.3 is congruent with the research questions. Data exploring questions 1. To what extent were students aware that they were studying a learning outcome-led module? and 2. To what extent were students aware that there were different types of learning outcomes in their modules?' were collected on an exploratory basis by means of the pilot focus group interviews, the focus group interviews and from the questionnaire, the in-depth case studies served as a source of corroboration for these findings. The feasibility of the informants' ability to respond to question 3. What are students conceptions of learning in the learning outcome and traditional designed modules?' was explored through the pilot focus group interviews. Data were collected relating to this research question through the focus group interviews and the questionnaires. Research question 4. To what extent do students have a more sophisticated conception of learning when studying learning outcome, as opposed to traditional, modules?' was informed by a comparison between the findings from question 3 relating to outcome-led and traditional modules in relation to Marton et al's taxonomy of conceptions of learning. The data relating to question 3 were collated with the analysis of the lecturers' perceptions of learning which were gleaned from the interviews and analysed using Marton et al's taxonomy; this provided the basis for the analysis of question 5. To what extent is there congruence between students' and lecturers' perceptions of what learning involves in learning outcome and in traditionally designed
modules?’. Both research questions 6. What constructs can account for the correlations between the curriculum design features influencing
students perceptions of learning on the traditional and outcome-led
modules? and 7. What evidence is there that the design features
identified in the constructs influence students' perceptions of learning?’
were informed by the factor analysis of the correlations of the variables
influencing students' perceptions of learning derived from the
questionnaire. These variables had been gleaned from a wide range of
responses collected through the focus group interviews and the
conceptual mapping survey. Respondents from all three levels of
undergraduate study on both traditional and outcome-led modules, from
male and female and mature students were included in the focus
groups and the mapping survey to avoid bias. The in-depth interviews
with four students provided the data source for investigating the extent
to which the design features which had been identified could be said to
influence how students perceive learning.

In line with Miles and Huberman's guidelines, coding checks were made
early in the study for intercoder reliability of the categorisation of
conceptions of learning, and then again later towards the end of the
coding process. The formula:

\[
\% \text{ reliability} = \frac{\text{number of agreements}}{\text{number of agreements} + \text{disagreements}} \times 100
\]

(Miles and Huberman, 1994, p. 64)

was used to ascertain the reliability of the coding process. At the
beginning of the coding process, 10 learning statement responses were
coded by the researcher and by a colleague with the resulting figure of
80% reliability. The assigning of codes to the two statements where
there was disagreement was discussed between the two coders and
consensus was reached on each respondent resulting in 100% agreement.
Towards the end of the coding process a further 50 statements were
intercoded to ensure that the researcher had not drifted into an
idiosyncratic form of coding; a rate of 90% was established for this
second stage of intercoder reliability. Four out of the five
disagreements from the second batch derived from a different
interpretation of 'awareness' which the second coder interpreted as part
of gaining 'understanding' and therefore category D. The researcher on
the other hand considered that 'awareness' per se was consistent with acquiring information which in itself did not necessarily imply that 'understanding' was taking place. After discussion agreement was reached on this issue; the remaining statement where discrepancy had occurred was also revisited by both coders and agreement was also reached. The discrepancy between coders did not suggest that a further sample was required, or that the coding of the learning statements should be reviewed. These results are consistent with Säljö's (1988) findings that in most cases the interjudge reliability is between 80 and 90% and that "reaching perfect agreement between judges is, in most cases, very difficult" (1988, p. 46) and those of Miles and Huberman, 1994, who suggest that the reliability should be in the 90% range. Having addressed the issues relating to the assurance of reliability in this study, validity will now be considered.

3.7.2 Validity
Researchers operating within the interpretivist paradigm address this issue in terms of external and internal validity. The former refers to the extent to which the findings are generalisable; this has been considered in 3.3. The internal validity of the study, the extent to which the instruments measures what they purport to measure, to which the account 'rings true', seems plausible and authentic are all key aspects of the notion of internal validity. The internal validity of the labels of each of the constructs which emerged from the factor analysis is considered in 5.6.7 and in detail in Appendix 19, whilst this section is concerned with the specific design features which address the issue of validity.

It might be argued that in qualitative research instrument validity relies much on the skills of the researcher, for it is the researcher who is interviewing and observing and then modifying the instruments from one iteration to another. Giorgi (1986 b) suggests that 'educated looking' is essential and that this requires the researcher to have a strong knowledge and conceptual base in the subject of the investigation, whilst Entwistle and Ramsden, (1983, p. 134) propose that, in relation to a phenomenographical approach, it is the analysis of interviews which pose "a greater threat to the validity of the data than their conduct". Indeed the understanding and interpretation of phenomena can only be
as incisive as the conceptual map of the researcher will facilitate. Throughout the analysis of the data in this thesis links have been made with prior models and theories and emerging concepts and hypotheses have been systematically related to each other and to existing research. Typically, and traditionally, triangulation has been perceived as the principal tool for improving the validity of research findings and as a "strategy that will aid in the elimination of bias and allow the dismissal of plausible rival explanations such that truthful propositions about some social phenomenon can be made" (Mathison, 1988, p. 13). Denzin (1978, pp. 294-307) outlines four types of triangulation: (a) data triangulation (b) investigator triangulation; (c) theory triangulation and (4) methodological triangulation. Theory triangulation remains the most problematic for it appears to be a call for the location of research issues within both positivist and interpretivist paradigms and as such can be construed as precluding the use of a single paradigm. This study is eclectic in terms of the triangulation of qualitative and quantitative methods, but it cannot be said to draw upon two theoretical perspectives. Data triangulation refers to the use of more than one data source and includes the use of more than one individual and more than one time frame. In this study both students and lecturers were a source of data and the time frame for the collection of data was over two terms spanning semester 2 and semester 1 of an academic year. Investigator triangulation means involving more than one researcher in the research process which is considered to be an example of good practice. This dimension of triangulation was not met in this study. Methodological triangulation on the other hand is at the heart of this design. Involving the use of multiple methods in a single piece of research, the rationale is that "the flaws in one method are often the strengths of another: and by combining methods, observers can achieve the best of each while overcoming their unique deficiencies" (Denzin, 1978, p. 302). Mathison (1988) challenges the basic principle underpinning triangulation namely the notion that "the bias inherent in any one particular data source, investigator, and particularly methods will be cancelled out when used in conjunction with other data sources, investigators and methods" (1988, p. 14). She suggests that whilst different methods might tap different 'domains of knowing', there is no justification that bias is thereby cancelled out nor that "what is left represents the truth about what is being investigated" (Mathison, 1988, p. 14). She therefore
rejects the notion that triangulation necessarily leads to a single proposition or to a single perspective, which has been the traditional interpretation of the technique, suggesting instead that it is a strategy which "provides a rich and complex picture of some social phenomenon being studied" (1988, p. 15) and that it provides evidence for the researcher to make sense of a phenomenon and to construct 'meaningful propositions' about the social world. Whilst convergence may occur, the over assiduous quest for it may result in the researcher overlooking the more valuable outcomes of revealing inconsistencies and contradictions within the data which may emerge from the process of triangulation.

In his later work Denzin (1989), like Mathison (1988), emphasises the importance of collecting data which are context-rich, meaningful and 'thick' to provide appropriate evidence for the researcher to construct explanations about the phenomena being researched. In this study both multiple instruments and data triangulation were used to collect such data. Focus group interviews and the conceptual mapping survey afforded the opportunity to explore the design features which students felt influenced how they perceived learning. A wide range of views were sought from students studying both outcome-led and traditional modules. Whilst the focus of the research on specific modules was concentrated upon education studies, all students in the sample were studying at least one other subject from the 92 available on the University's modular scheme. This data was further enriched by the inclusion of the perspectives of lecturers committed to learning outcome-led design, teaching learning outcome-led modules but not committed to the design, as well as those who were teaching traditional modules and were opposed to the specification of outcomes necessitated by the new model. The eight students who were selected to be interviewed in-depth from the level 1 module were all chosen because they had a conception of learning which was inconsistent with both that of their lecturers and also the majority of students taking the module, they were seen as manifesting an atypical response to the outcome-led design and thus their views were sought to explore why the hypotheses which were emerging did not apply to them (See 5.4 & 5.7). Triangulation was thus used to reveal what might be termed potentially 'negative', inconsistent and contradictory evidence.
The use of factor analysis to explore the correlations between the design feature items which influence how students perceive learning is an example of quantitative methodology in this study. But its use per se cannot be said to provide a source of triangulation for it is a technique which reduces data that already exists rather than serving to widen and enrich it, the constructs which emerge representing a configuration of the correlations of these items. Triangulation was, however, used to probe the validity of the labels of these constructs. Using SPSS, students' were ranked according to the extent to which their responses to the Likert scale loaded on the 3 retained factors for all modules and for the outcome-led modules. Students with high and low loadings on each factor were then selected to be interviewed (Figure 3.3) to explore the validity of the factors (see 5.6.7).

Triangulation through the use of multiple methods was used both to enrich the descriptions of students' conceptions of learning and to seek corroboration of the findings with their statements about learning. Eight students were interviewed and in each case the conception of learning identified from the statements was unequivocally confirmed by the analysis of the interview data. Four of these in-depth interviews are analysed and discussed in 5.7.3.

Whilst the principal technique utilised to assure the internal validity of this study is triangulation, piloting has also featured as a significant strategy. Validity is concerned with assuring that researchers and respondents share the same - or as near as possible the same - meanings in linguistic terms. The meaning of language will inevitably always remain open to interpretation by individuals, but steps were taken in the design of the study to minimise the possibility of misinterpretation, particularly with respect to the written word. The pilot focus groups explored the meaning of the wording of the questions on both the conceptions of learning and the design features and later in the study the piloting of the questionnaire was used as a second check on the validity of the questions (see 3.5.5).

Entwistle (1991, p. 8) suggests that claims for validity in research on students' learning rest partly on the 'test of plausibility', the extent to which the research may be said to describe a recognisable reality to
those who are familiar with the context of the work. Such a criterion is
difficult to substantiate, but the presentation of findings relating to this
study in papers at three international research conferences - Allan (1995
b) at Using Research to Improve Student Learning, 3rd International
Improving Learning Symposium, University of Exeter, 11-13
September 1995; (Allan, 1966 b) at Improving Student Learning
Through Course Design, 4th International Improving Learning
Symposium, University of Bath, 9-11 September 1996; (Allan 1996 c)
at The European Conference on Education Research, University of
Seville, 25 - 28 September 1996 - have resulted in expressions of
credence and familiarity rather than cries of disbelief.

3. 8 Summary
This chapter has sought to describe critically, and to provide a coherent
rationale for, the design of the study. Research into teaching and
learning poses specific constraints and demands such that Entwistle and
Ramsden (1983, p. 131) suggest that it is important that the choice of
methods does not "undervalue the dynamic tentative character of student
learning in favour of a static consistent view". The eclectic approach
which has been adopted seeks to yield data which are reliable and valid,
in qualitative terms, and which are sufficiently meaningful both to
represent the nature of student learning as it manifests itself in the
context of this study and to provide sufficient evidence to substantiate
the emergent findings.
Chapter 4
Presentation and Analysis of Data (1) Conceptions of Learning

4.0 Results and Discussion
Data informing the following research questions are presented and discussed in this chapter:

1. To what extent were students aware that they were studying a learning outcome-led module?

2. To what extent were students aware that there were different types of learning outcomes in their modules?

3. What are students' conceptions of learning in the learning outcome and traditional designed modules?

4. To what extent do students have a more qualitative conception of learning when studying learning outcome as opposed to traditional modules?

5. To what extent is there congruence between students' and lecturers' perceptions of what learning involves in learning outcome and in traditionally designed modules?
4.1 To what extent were students aware that they were studying a learning outcome-led module?

The extent to which students were aware that they were studying a learning outcome-led designed module was deemed to be important in terms of the level of students' consciousness of their own learning process and environment. The phenomenographical approach adopted in this thesis is concerned with the second-order perspective of how the world is construed by students and is based on the rationale proposed by Säljö (1988, p. 36) that people act in response to their own "interpretation of the situations they find themselves". The curriculum model posited in 2.3.2 seeks to make students more aware of the outcomes they are expected to achieve in a given module and to heighten their consciousness of the nature of the learning activities that they are expected to undertake in order to achieve these outcomes.

The extent of the students' awareness that they were studying an outcome-led, rather than a traditional, module was very high at each of the three undergraduate levels. 90% of all of the respondents were aware that they were taking outcome-led modules prior to completing the questionnaire (see Figure 4.1), 63% from the first session of their module, 23.0% by the time they were working on their first assignment and 4% at various times before they completed the questionnaire (which

![Figure 4.1](image_url)

**Figure 4.1**

**Awareness of Module Type**

<table>
<thead>
<tr>
<th>Percent</th>
<th>Start of the Module</th>
<th>Day of Questionnaire</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>63</td>
<td>23</td>
<td>10</td>
</tr>
</tbody>
</table>

*Awareness of outcomes No. = 104*
is represented by 'other' in Figure 4.1). Only 10% of respondents were first made aware that they were studying an outcome-led module on the day they completed the questionnaire.

The extent to which students were able to articulate what they understood by the outcome-led modules differed between respondents. The focus group interviews revealed that some students claimed to be aware of the outcomes but were unable to explain how these modules differed from traditional modules, one respondent saying:

"I, .. I find I can't really tell you what a learning outcome module is, but I know that I'm doing it" (focus group respondent).

whilst another:

"I know learning outcomes are involved but I don’t really think of it as a learning outcome module by name, but, it is more structured in this one, yes there is a difference" (focus group respondent).

But many of the students were both able to articulate their interpretation of what these modules involved:

"they present the content and perspectives and the other skills that we should have at a high level" (focus group respondent).

"I think the same as Karen actually, I mean, I do actually see it as a learning outcome module, I mean, it’s so plain what you’re supposed to be doing with skills and things" (focus group respondent).

"I think er, what’s the word, the modules, modular explanation is very good and clear compared to x [the student's joint subject]. In x it’s not put that way, and I think that perhaps it should be" (focus group respondent).

and also explain how the outcomes relate to the assessment régime:
"they're broken down into groups so that each of the different bits of assessment you do reaches different parts of the learning outcomes" (focus group respondent).

"You've got to meet all the outcomes it's just that you do them at different times. You do three outcomes for the essay and then some for the presentations and the others for the log book" (focus group respondent).

Out of the 24 students (10%) who did not become aware that they were studying outcome-led modules until they began working on their first assignment 18 (75%) were at level 1, and 3 (12.5%) were working at levels 2 and 3 (see Figure 4.2). Since the design explicitly links the assessment tasks and criteria to the learning outcomes, careful reading of the former would necessarily involve reference to the learning outcomes in order to appreciate what the tasks and criteria entail. It is therefore not surprising that awareness of the outcomes is heightened through the process of assessment. As one of the students who fell into this category explained:

"I have to say that at the beginning of the module when we had the module guides at the beginning of the module itself then no, I didn't perceive it to be any different to any other module, no I didn't see the
difference, because we were given the guide and I didn't really look at it. But when it came to the essay I read the assessment bits and then I realised the outcomes were important" (focus group respondent).

This was corroborated by a respondent who had explained that she, too, had become aware of the learning outcomes through the assessment régime:

"for myself it was just a matter of picking up the module guide and reading through it and then when obviously you're looking for your assessment criteria you say what am I being assessed against? And you realise the outcomes are there" (focus group respondent).

All three of the outcome module tutors interviewed commented on the congruence between assessment and outcomes. One particularly emphasised the importance of the student taking action to relate the outcomes to their learning through the assessment régime:

"initially I don’t think they necessarily see it as anything different other than, from aims and objectives or whatever. I think as they go through it and they use the outcomes and look at them and study them as they’re working through, they see the difference as they go through the module. They’re actually using them, their learning is more based, more upon a set of specific outcomes which will be, which are, linked to the assessment. So I think that’s where, as they do the work and the assessment, they actually discover the outcomes" (focus group respondent).

The importance of learner action was equally emphasised by another outcome module tutor who felt that just telling the students that it was an outcome-led module would not bring about any change in how the students perceived what learning was in the module and that students needed to work with the outcomes to appreciate what they involved:

"yes, I mean, I go through them at the beginning but, their conception of what learning outcomes are may vary considerably. So I do go, I mean I go through the outcomes, but when you read through a list of outcomes, at first it’s a bit like reading through a list of aims and
objectives. So you say, well these are outcomes and these will be assessed at the end. But to what extent that means anything real for them, may only appear as they work through the module and the outcomes I think" (focus group respondent).

The timing of the awareness thus appears to be linked to the extent to which students take action in response to the module learning experience, but it is also related to the level of study (see Figure 4.2). Since all of the students taking education studies modules at levels 2 and 3 had completed at least one outcome-led module in their first year of study, it seems reasonable to propose that the completion of one learning outcome-led module leads to a heightened awareness of the design in subsequent modules. Indeed the findings from those students who were interviewed during the semester following their first outcome-led module support the hypothesis that the timing is related to familiarity with, and response to, the module. When asked to what extent, if any, the study of their first outcome-led modules had made them more conscious of learning outcomes one stated:

"yes, yes, doing that module it's made me far more aware for this semester of what to look for, of the outcomes and of what I'm aiming for. Its changed the way I look at modules now" (focus group respondent).

and another:

"I look for the outcomes now and read them carefully right at the beginning of the module" (focus group respondent).

The small number of respondents at both levels 2 and 3 who were not aware of the outcomes at the outset of the module cannot be fully explained. However the three level 3 students who stated that they were not aware until working on their first assignment that they were taking a learning outcome module may well have only studied one previous outcome module, that is at level 1, so a progressive decline through from level 2 to level 3 in the incidence of late awareness is not necessarily expected.
There remains a number of students who only became aware of the outcome-led modules on the day they completed the questionnaire (see Figure 4.3). Whilst the higher number at level 1 is consistent with the data referring to a higher incidence of late awareness shown in Figure 4.2, there is a limited explanation for the five students at levels 2 and 3 who were unaware that they were studying an outcome-led module. However one lecturer who was interviewed suggested that there will always be a proportion of students who do not respond:

"no I don’t think they are all aware, no. I think there are always some students who never look at the module guide and who don’t finalise, who don’t think about learning or what they are learning really, they are just doing, they’re just performing the assessment, they’re just going through the motion of learning".

These 5 level 2 and level 3 students appear to fall within this category.
4.2. To what extent were students aware that there were different types of learning outcomes in their modules?

All of the respondents who were conscious that they were taking an outcome-led module stated that they were aware that the outcomes were defined in terms of subject specific and transferable skills and all were able to give an appropriate example of these two types of outcome in respect of the module they were studying. The following extracts from a focus group discussion with level 2 students is indicative of the extent of appreciation of personal transferable skills:

"I think it means the skills you need to gain in a module"

"yes like self-assessment"

"you have to reflect on your progress don’t you, in all of them (outcome-led modules) You need to learn how to work within a group, and to work on your own"

"and communication skills, because you’ve got to learn to be able to communicate with other people”.

"it’s almost the tools of the trade, isn’t it in simple terms?"

However the awareness of the generic academic outcomes was not as widespread. Whilst 82% of questionnaire respondents taking learning outcome modules claimed to be aware of the generic academic outcomes only 46% of all respondents (see Figure 4.4) both claimed to know that the modules contained this type of outcome and were also able to give an appropriate example relating to the module they were studying; a further 36% claimed to be aware of their existence but were unable to give an example. This statement from a focus group respondent, illustrates how some students tend to see the generic academic outcomes as being implicit within the modules:

"well it depends how far you go into the outcomes I mean argumentative skills, analytical and being critical are important. I mean they must go through out all modules depending on the level you’re at, it takes it away from just contents [subject specific outcomes]. Just contents .. It’s not sophisticated enough".

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Figure 4.4
Awareness of academic outcomes

Total no. = 104

- Aware no example: 35.6%
- Aware + example: 46.2%
- Not aware: 18.3%

whilst many others needed more prompting to actually articulate their perceptions:

"so you’ve mentioned subject knowledge and you’ve mentioned group work and skills like that. Is there anything else that you think is defined within the outcomes?"

"well, in my modules, all the modules with learning outcome, they also want critical thinking and analysis ".

"yes I agree with that".

"me too" (focus group respondents).

The disparity in awareness of generic academic outcomes compared with subject-specific and personal transferable skills gleaned from the questionnaire data was corroborated by a tutor from an outcome-led module who explained:

"well, I think that they (the students) are aware that the different types exist in the sense they are working towards, and they are working through them. So, for example, I think they separate them out too. I think that
they see transferable skills and academic outcomes as being separate from subject outcomes particularly when it comes to the sorts of assessment like presentations, and that sort of thing where it is clear which outcomes they're being assessed on, in terms of the subject specific elements, and which are presentation outcomes or other transferable skills, or which academic outcomes. I think that, I think there maybe more of a blur between subject and academic outcomes. But I think the transferable outcomes are much more evident. And it says in the module, if they look in the guide it actually tells them which outcomes are being assessed by which particular pieces of work. And I think if they're used to it, particularly by the time they get through to level 2 they appreciate which are which”.

Just as the level of general awareness of the outcome design differs between levels 1 and levels 2/3, the percentage of those students at each level who were both aware of the generic academic outcomes and able to give an appropriate example differed between level 1 and levels 2/3 (see Table 4.1), although there was no significant difference using a chi-square test on the data.

Table 4.1
The Level of Awareness of Generic Academic Outcomes by Level

<table>
<thead>
<tr>
<th></th>
<th>level 1</th>
<th>level 2</th>
<th>level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aware + example</td>
<td>35.85%</td>
<td>53.0%</td>
<td>61.9%</td>
</tr>
<tr>
<td>Aware no example</td>
<td>41.5%</td>
<td>33.3%</td>
<td>23.8%</td>
</tr>
<tr>
<td>Unaware of generic</td>
<td>22.6%</td>
<td>13.3%</td>
<td>14.3%</td>
</tr>
<tr>
<td>academic outcomes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Level 3 students were more likely to be able to articulate what they understood by generic academic outcomes than level 1 students and were less likely to be unaware of these outcomes than level 1 students. There was a slight difference between levels 2 and 3. These data are consistent with the hypothesis that the completion of one learning outcome-led module leads to a heightened awareness of the design in subsequent modules'.
4.3 What are students' conceptions of learning in the learning outcome and traditional designed modules?
The conceptions of learning held by students and lecturers for the modules which were analysed in this research were classified according to Marton et al’s taxonomy (1992) discussed in 2.4.2 and presented in Appendix 5. As no respondent held either a conception A or F the analysis has been confined to conceptions B, C, D and E.

4.3.1 Conception B (Learning as memorising and reproducing, learning is oriented towards assessment).
Typically students holding a conception of learning categorised as B describe the referential aspect of the 'what' of learning, as the acquisition of facts and the structural aspect of both the 'what' and the 'how' as having an external horizon relating wholly to assessment.

One level 1 student describes how learning in an outcome module is perceived:

"I think learning in this module is having lectures and taking in facts, also showing that you have learnt the information through doing assignments. Learning in this module is basically listening to lectures, attending seminars and handing in three assignments where learning is assessed through the knowledge you put in essay writing, log-book and a presentation. I know that I have learned in this module only through the grade I receive" (Respondent (R.) 006).

Whilst this respondent does not refer to reproducing per se - which is a strong characteristic of the 'what' aspect of conception B - there is a clear emphasis on the acquisition of knowledge. Learning is perceived as being solely for assessment purposes and is judged entirely on the level of achievement in terms of the assessment criteria. The approach, the 'how' adopted by the learner is geared to the acquisition of information to fulfil assessment requirements, although there is no indication that he/she sees learning by repetition as the predominant strategy.

A level 2 student holding the same conception displays a stronger referential aspect of the 'what' of learning, emphasising the need to acquire, retain and reel off information:
"I think learning in this module is about gaining information and retaining this for the assessment and for quite some time - memory. If I remember facts etc. then I have learned it. I use the module guide to help me structure my learning i.e., the weekly learning and I did some wider reading for the assessment. I did the minimum amount of work possible. I know I have learned something if I remember it and also if my assessments are clear" (R. 065).

Whilst each of these respondents stress a different facet of conception B, the former stressing the acquisition of information and the latter the memorisation of knowledge, neither display an approach which emphasises that learning takes place by repetition. But they both share an external horizon which describes learning in their modules as being predominantly confined to the specific purpose of assessment. The following level 3 respondent on a traditional module manifests both characteristics of the 'what' of learning shown by each of the preceding respondents and shares the external horizon typical of conception B:

"learning in this module is about acquiring skills and expanding knowledge. In this module you get an overview but the actual knowledge is self-generated. It would be better to pick one area and to receive input from the tutor so that learning is the same for all students and more measurable. Learning in this module is confined to meeting tutor's requirements for grades. My own learning is difficult to measure for this module. I learned a lot about x [a topic related to the module], but the information was self-obtained. The educational setting only served to obtain the grades. I accessed the information from outside sources and no independent input on my subject was given UNLESS asked for. I know I have learned something in this module because I can recall some information on x" (R.122).

The student expresses considerable concern about the fact that participants on the module are given freedom to choose their area of interest. His quantitative perception of learning leads him to be anxious that all students are not learning the same information, for he sees learning as being ready-made and waiting to be acquired and stored (Marton et al., 1992). This lack of commonality of a knowledge base poses an issue in terms of assessment as it precludes measuring - and
presumably comparing - how much information has been acquired by each student for assessment purposes. He also expresses reservations about the status of the knowledge which he has acquired through his own study which is outside of the teaching context and therefore the control of the lecturer. There is a tension here between the attempt to broaden the learner's external horizons by the lecturer both in terms of the 'what' and the 'how' of learning, and a desire, on behalf of the learner, to confine the 'what' and the 'how' of learning, to the assessment and recall of information shared by all of the participants on the module. This respondent falls firmly into the B category of learning, manifesting a quantitative conception of learning in the level 3 module.

A more in depth description, given through an interview, serves to elucidate that within the subject of education studies those respondents who are categorised as having conception B see memorisation and recall as a feature of the 'what' of learning, but for them the referential aspect of the approach, the 'how' is characterised more by the ability to access information for assessment purposes than to learn by repetition:

"when you filled in the questionnaire you said that learning in this modules was about the accumulation of knowledge, of facts about x (the content of the module) and writing the assignment, and giving a presentation and so on. Can you just talk a bit more about that?" (author)

"yes. Well for me to learn something, I need to read it through several times and write it as well. So I find that writing notes helps me enormously, it jogs my memory of whatever I'm trying to learn. Not necessarily to have to read then through again, but just to physically write them helps me to remember it" (R.017)

"so learning is remembering for you?" (author)

"it is in a lot of ways, yes.......I think when it actually comes to the module there is perhaps more to learning than physically remembering things, it does help enormously. If for example, you want to quote
something about X it helps if you can remember where you've seen the item as well as keeping your records so that you can go immediately to what you want to be able to refer to that particular item. So although I did not necessarily learn everything off by heart, I did my best to remember as much as I could and at least which book I've got the reference from, so that I could quickly go to my notes and find exactly what I'm looking for" (R017)

'How did you go about learning in this module?'
(author)

"I spent quite a considerable time actually. I went to my lectures, I spent the rest of the day finding the books etc. If I could borrow them then I took them with me and found the information in them that I required, made notes on that and returned the books the following week. If it was a short loan then obviously I had to study it while I'm here, get as much information as possible and then hand them back in again...It was going to the library, gathering information, collating, and then writing the assessments" (R.017).

The referential aspect of both the 'what' and the 'how' of learning characteristic of a conception B, according to Marton et al's taxonomy (1992), are both tempered from being equated to memorising, reproducing and recalling something and learning by repetition, to being typified by acquiring and accessing something. This modification of Marton et al's taxonomy is necessitated by the environment in education studies where module assessment does not involve examinations; this precludes the necessity to memorise and to learn through repetition from being a predominant feature of learning in this category for these students. What is significant is that the object of learning is perceived as being the acquisition of pieces of information.

A further distinction which requires elucidation in determining a student's conception of learning is the meaning attributed to the word 'understanding' which many students - and lecturers- use loosely to describe the process of learning rather than engaging in philosophical discourse about the meaning of the concept. In this context, understanding might be inferred to mean comprehension, as a low level of understanding where a student 'knows' what is being communicated
and can make use of it without relating it to other material, seeing its fullest implications or abstracting meaning. Probing with specific reference to the outcomes clarified further this respondent's perceptions of 'understanding':

"I think understanding is actually being able to do what you need to do in the subject. If you haven't understood then you're not capable of carrying on. So then it's a case of stepping back and doing a little more reading to find out (author's emphasis) more so that you know exactly what you are doing so that you can go forward, and that to me is what understanding is. To find out where you've got to, and know what you've got to know, to be able to go forward" (R. 017)

“When you say, 'to know what you've got to know', what do you mean by that?” (author)

“well it depends on the subject obviously. With, with this module you can't really write an essay unless you know what you're writing about. So you need to do the reading quite effectively to be able to provide enough information to answer the question" (R.017).

Understanding for this respondent relates a quantitative perception of 'knowing more' as opposed to "looking into things" or "having a view of something" (Marton et al, 1992, p. 288) and consequently locates her conception of learning in the module firmly within conception B.

4.3.2 Conception C (Learning as applying)
Remaining within the quantitative half of the dichotomy, learning can, according to Marton et al's taxonomy (1992), be seen as applying facts and information to the real world; this is exemplified by conception C. Unlike conception B, the external horizon of both the 'what' and the 'how' of conception C extends beyond the institutional and the assessment context to what Marton calls the 'person's life world' (Marton et al, 1992, p. 287). A level 1 student on a traditional module explains:

"learning for me in this module is about thinking about all the points that have been made in each session and
after each session trying to find more information about them by reading relevant books etc. something that I believe is expected of me in this module. My learning in this module is basically based on my personal experience in language learning and relating what I learn to being taught 3 foreign languages apart from my first language (Greek). I know I have learned something from this module as I can use it in my career and I know how to distinguish all the teaching methods between languages and approaches and how each of them contributes to successful language learning. I need to use books from the library as this may bias the lecturer since the bibliography in each assignment indicates how much a student has worked on the subject" (R 151).

The 'what' aspect of this response incorporating the acquisition of knowledge and information is a necessary facet of both conception B and C, but it is not a sufficient criterion for the latter category. The external horizon of this respondents, however transcends the institutional context of category B and involves applying what has been learned to the respondent's personal experience of language acquisition and also looking to the future in terms of the application of knowledge in a professional context. In this respect, whilst this student's conception of learning can be seen to share affinities with typical conception B, it also differs from it significantly, and was accordingly placed in category C.

Similar characteristics manifest themselves in the following statement from a student taking a level 3 traditional module:

"I think that learning in this module is about becoming aware of, and training yourself to adopt, certain approaches towards behaviour and helping others to learn. Instead of applying knowledge or information to a topic for analysis in terms of historical perspectives and reforms, this module just seems to be based on learning styles and specific techniques. This gave it a more practical feel than the other modules [which the respondent had studied]. I went about learning from the
handouts sheets we were given and felt that information was the most useful and I built upon this through extra reading and practising my second assignment with my flat mates. I needed to show through assignments both an understanding of the theories of training and an ability to put these theories into practice. I also needed to show an awareness of a range of issues that are current" (R. 133).

This respondent clearly suggests that there is a practical dimension of application in the module and the external horizon is beyond the immediate institutional context to the real world of teaching people to learn which is wholly consistent with conception C. However, the content of the 'what' aspect is less explicit than in the statement from respondent 151. There is limited reference to information/factual acquisition, although there is an indication that learning in this module involves knowledge of techniques, learning styles and relevant theories. The reference to awareness also implies that there is information about current issues which participants are expected to acquire. The respondent refers to the need to understand the theories of training, but there is no direct indication of the level of understanding which is implied. The dilemma relating to the notion of understanding has been discussed both in chapter 3 and referred to in this chapter. Here the student does not qualify or give any indication of what is meant by understanding, or that she perceives 'understanding' as involving anything more that describing and applying training theories. Moreover the respondent does refer to her conception of learning in other modules as requiring analysis whereas learning in this module is said to be of a more practical and (by inference) less analytical nature.

Accordingly the student was judged to have a conception of learning in category C.

The issue of 'understanding' arises again in this statement by a level 2 student on a learning outcome-led module:

"learning in this module consists of acquiring the knowledge needed to fulfil the outcomes, the essay and the presentation, and deciding what type of research methods to use in each context. In this module I have learnt how to prepare, design and carry out a piece of
research and how to present data. I look at the indicative reading and use this and the seminar issues to base my learning on. I know I have learned something in this module as I now have an understanding of research paradigms and data collection instruments" (R. 056).

The respondent sees learning in the module as involving application in terms of carrying out a piece of research, her conception is therefore C rather than B, the question then remains as to whether her conception should remain within the quantitative dichotomy or whether her reference to understanding suggests a category D. The student refers directly to acquiring knowledge as well as saying that she has 'an' understanding of paradigms and data collection instruments. The level of this student's conception cannot be allocated uniquely on the use of 'an' understanding, there is no indication in her questionnaire that she sees grasping meaning, seeing things in a different light or gaining insight as part of what she states as understanding, which would suggest a category D. No such inferences can be made from her description of how she perceives the generic academic outcomes or the subject specific outcomes, and she makes no further reference to understanding in her response. There is no indication from her statement that she sees learning as a qualitative as opposed to a quantitative concept. Whilst this distinction may appear somewhat spurious, the statement made by respondent 056 contrasts starkly with another level 2 student on the same module who was unequivocally categorised as having a qualitative conception:

"I consider learning in this module to be thinking in a way that I've never done before and being able to do something new. In this module I consider learning to be able to think like a researcher and to do a study from that perspective. This module has greatly improved my viewing things objectively and seeing things from a different perspective. To learn in this module involves extensive reading. I know I've learnt something as I can understand and give my opinions on the work done" (R. 064).
Respondent 056 was categorised as having conception C, because she perceived learning as the application of the knowledge she had acquired. The assessment context is implicit in her concern to fulfil the module outcomes, but her external horizon is also related to a research project which is a consistent with her personal life world and the notion that one applies what is learnt when the need arises.

The in-depth interview of third respondent sharing the same conception of learning was less problematic as the following extract from a conversation with a student studying a learning outcome module illustrates:

"from my point of view as a student then I think from my individual point of view then the module was about facts about past educational problems you know, historical, history of FE, (Further Education) history of universities in this country, so you had lots of facts and figures, I am very interested in facts lots of facts and figures, I am very interested in facts and figures, but also to apply them to what is happening now so I took it very much as a combination" (R. 032)

"can you talk to me a bit about what you mean by applying facts?" (author)

"for myself I actually completed a Cert. Ed. the year before last, so I have sort of a way of increasing my awareness and highlighting to myself certain things about FE that maybe I hadn’t realised before. The background you know, sort of the Technical Colleges and all that, to see where we are today, so yes for myself it was about the application of the academic and the vocational to what I know about FE and also about not pigeon holing people into an academic vocational route" (R. 032)

" how did you go about learning in the module?" (author)

"I attended lectures and seminars and then as we were building up to the assignment and presentation I was reading and acquiring information constantly as I was preparing my things for assessment, I thought what is actually asked of me, what am I being required to do in
order to achieve, obviously a pass mark, in order to pass the module" (R. 032)

"can you talk to me a bit about what you think you had to do for your assignments?" (author)

"Yes well I have to say I did found this one very difficult, it took along time to get focused on the introduction and the background of what I wanted to talk about, it took quite a while for me to decide on what direction to take, er I can probably say, and I can remember this quite vividly sitting at my dining room table, it quite probably took me six or seven drafts to get the way, the direction I wanted to go, at the end of that I still found I wasn't quite sure, but I think it was a very personal view of what the vocational and the academic divide was from my own point of view, looking at historical facts bringing it through to the 1980's. I was sort of looking at the historical, you know the governmental and political information, and then bringing it up to date to what is happening now, I also had to be very careful because looking at the vocational side and the NVQ, I have actually taught NVQs and it can be very suggestive as to what I thought, I had to apply to my own experience, but put facts as well, I did find it difficult" (R. 032).

The principal criteria for the allocation of conceptions to category C are fulfilled by this statement. The referential aspect of the 'what' of learning referring to applying knowledge is apparent whilst there is equally a dimension of acquiring of 'facts and figures' and storing information. The respondent's external horizon relates distinctly both to her own previous experience within FE and also her current involvement in the sector; her own life world. There is no reference to understanding and no indication that the respondent has any more than a quantitative conception of learning in this module.

Two of the lecturers were judged to have expectations for their students which were consistent with conception C; namely on the level 1 traditional module and the level 2 learning outcome module. An interview with the level 1 lecturer revealed her clear conception of what learning was about in her module:
"what to do I want them to learn? Probably three or four things, I think mainly become aware of the process of language acquisition and of second language acquisition and how they can try and apply that when they are in a role of teacher. We try to raise our own awareness of language as well as just making them think about the different roles that language can have as well, and I try to touch on a few methodologies of teaching languages, but I really see that coming in later on it's really making them aware of factors that influence learning another language, learning a second language. So we have looked at distinctions as well like foreign language and second language and those kinds of things but I think the major concentration is really on the factors that influence the acquisition of the second language and I've got them to try and think about their own language".

Whilst the acquisition of knowledge is not mentioned directly in this statement the referential aspect of the 'what' of learning in this module is defined in terms of the students becoming aware of the process of language acquisition and of relating this to their own life experience. The importance of application was further elucidated:

"what about applications you mentioned the word apply how important is that? How strong would you say applying is in the module?" (author)

"I think they ought to be able to apply at this stage I'm not worried about the assignment or teaching situation I am concerned that they ought to be able to think about learning a language and relating it to either their own experience or the experience of other students in the group and then by extension hopefully they'll apply it more widely" (level 1 traditional module lecturer).

This external horizon of the student's 'life world' is consistent with the structural aspect of the 'what' and 'how' of learning described by Marton et al (1992) as conception C. Further probing into the learning objectives in this traditional module illuminated what the lecturer perceived as the 'processes of language acquisition':

155
"can you tell me what the learning objectives are?" (author)

"I think it's to be aware of language learning really to reflect on their own experiences and relate back to the theoretical models develop their own understanding, it is really to be a bit more aware of language and the role of language and the status of different languages and dialects and different forms of speech and writing, it's more an awareness that there are models rather than a complete understanding of any particular model, I emphasise that to them, because it is very difficult for them to get to grips with the models" (lecturer).

This discussion led once again to a reference to 'understanding' and the attendant need to establish whether this implied a quantitative perception related to knowing more about or whether it referred to 'looking into the learning material' or 'having a view of things' as described by Marton et al (1992), and in consequence whether the notion of understanding perceived by this lecturer in this module was compatible with a conception C or conception D of learning. Further discussion established this more clearly:

"what do you mean by understanding?" (author)

"mm, Well a bit more than regurgitate, not just describe, but compare and relate to their own experience. I suppose not to be able to identify all the components of the model and explain how they interrelate necessarily but know that for example Chomsky dealt with language acquisition and know and understand just what that involves, but not to have a complete understanding of Chomsky's theory of language acquisition necessarily so not that kind of distinction, or with Spolsky to know that he put forward x number of conditions and these are some of the conditions and this is how they can be applied to and relate to their own experience of learning, but not necessarily to quote all of the variables that can affect the learner and the teacher and so on"(lecturer)

"what about in connection with the seen exam, do you see understanding as being different in this context?" (author)
"I would expect factual knowledge of the models, application to their own experience and erm perhaps a comparison, but not a complete understanding of Spolsky's model and to know that differs from somebody else's model, no not that necessarily although some people may be able to achieve that, but they all should know the components of the model and relate that to language learning and its application to the process of learning" (lecturer).

Here understanding is interpreted as having factual knowledge of the theoretical models of learning; as knowing the components of models; and as knowing to what aspect of language learning specific models refer. This definition is consistent with a quantitative rather than a qualitative definition of learning, and confirms that, together with the criterion of application which has been identified, this lecturer perceives learning in terms of conception C of the taxonomy.

An interview with the level 2 learning outcome module leader also led to further discussion of what is meant by understanding:

"so what do I think learning is about? Well I think very quickly they have to learn something about the paradigms and therefore about the theoretical underpinning of education and social science research. So there is an element of that which is theoretical and based upon clear academic argument. However, they also then have to learn to apply it in a practical sense. So I think in this, within this module, there is that application of theory to practice. They're learning how to develop a train of thought in an argument, and also I think, they're learning the process and the procedures of writing a project. Yes a process, and we give them quite a structured process, and they learn each part of that process. So they learn what we mean by the theoretical underpinning, they learn about the methods of data collection and analysis and they learn about presenting that information......I think they need to have a knowledge of processes, a knowledge of how everything works and then apply it to a particular situation" (lecturer)

"if you talk about application in research methods which is clearly a module which is about application,
Where does understanding come in there?" (author)

"right, well it's an understanding of educational research methodology, of how the methods have to be linked in with a paradigm or a particular research culture if you like. Therefore how the approach adopted is related to theory of what research is about and how all research is carried out within a body of, a group of people who think the same and so on" (lecturer)

"so what do you mean by understanding in this context?" (author)

"right, okay. Well there's the understanding of knowledge, there's application and there's an understanding of the application of the knowledge" (lecturer)

"can you clarify?" (author)

"there's an understanding of knowledge by which, I mean, knowledge, understanding, being able to internalise it, being able to identify, being able to latch it on to hooks that are there within your own perceptions, your own knowledge, and I think that there is application where you are applying knowledge from one situation into a new situation applying it to a different situation" (lecturer)

"so what you are saying is, you, you think they need to have made these links and have these hooks before they can apply it to a new situation?" (author)

"yes. Yes. I do, I think they need to have knowledge of processes, a knowledge of how everything works and then apply it to a particular project. I mean because I do have this idea of the application, of using knowledge. You have to, I think, have an underpinning knowledge of the whole system and where it fits in order to apply it to a situation. Otherwise, you, you are stumbling around in the dark" (lecturer).
The tutor sees understanding here as related to the individual learner in that he/she has to internalise knowledge, but knowledge itself is still seen as being ready-made and imparted, rather than being constructed by the learner, thus the tutor refers to: 'knowledge of how everything works'; 'how all research is carried out within a group of people who think the same'; 'they’re learning the process and the procedures of writing a project'; 'we give them quite a structured process'; 'they learn what we mean by theoretical underpinning'. The referential (meaning) aspect of the 'how' of learning is predominantly a consumption view in which the component parts are: the knowledge and procedures - which are given by the tutor; the learner - who discerns the parts of the knowledge and procedures; and the situation in which the knowledge and procedures are applied. Furthermore the emphasis is, by this tutor, on the application of learning, rather than on how the learning is undertaken and on how the knowledge and procedures are seen from different perspectives, both of which are distinguishing features of conceptions D, E, and F and not C. Thus the perception of learning held by the tutor for the level 2 learning outcome module was deemed to be firmly within conception C.

4.3.3 Conception D (Learning as understanding)
There is an important distinction between conceptions A, B, and C, and C, D, and E which is represented by a quantitative/qualitative dichotomy. In the former knowledge is something that is picked up in absorbed and stored and put to use when the occasion arises (conceptions A, B, C), as one student explained when he described how he saw learning on his level 3 traditional module:

"I tend to put information in 'parcels' in my head then précis them on paper. Then I condense this information into small parcels ready for use and recall and expand them when necessary."
(R. 129 - respondent's emphasis)

Whereas in the second three conceptions (C, D, E), the 'what' of learning is conceptualised by 'having a view of something', seeing something from a different perspective as the following two level 1 students on an outcome module explains:

"Learning in this module involves considering all different points of view, of being aware of the dilemmas
in post 16 education and understanding the future implications” (R001).

“I realise that I have learnt something if I am able to talk about topics and ideas related to the module quite confidently and discuss and argue different points coherently.......In this module I need to learn a lot about issues related to post 16 education and challenge them... this is the point when I can start to critically examine the issues” (R016).

“It’s about the various factors affecting appraisal and its contentiousness as an issue - we need to discuss the issues involved and relate them to other areas and develop our own interpretations” (R089).

The external horizon of the structural aspect in both conceptions D and B is confined to the study situation, this feature is clearly apparent in the statement made by a student on a level 1 traditional module:

"my definition of learning in this module is the ability to relate and construct ideas, concepts and particular strategies in a manner that shows complete understanding of the subject" (R. 156)

The 'how' aspect of conception D corresponds to how meaning is achieved, the internal horizon being the learner developing or discovering meaning. Descriptions by respondents in this category centre on the learner and learning activities:

"learning in this module is about finding a deeper aspect to concepts, before thought of on a simpler level. My own learning in this module is the gradual accumulation of facts, data and information put to me in various forms. What I learn does not just enter my head in the structure it was put to me, but it is taken apart and analysed, then I draw my own conclusions unless I am being taught factual evidence " (R.157).

and this level 3 student:
"learning in this module is about gaining a wider view of the subject in a social context, and the re-evaluation of my own preconceived views. My perceptions on the subject have altered." (R118).

An in depth interview with one respondent exemplifies the distinguishing features of a category D conception of learning:

"there was a lot, I found, there was a lot to do with politics involved in it, which was difficult. There were a lot of new things that are just coming around because of GNVQs and things like that, so there was a lot of current thinking and there seemed to me to be, not a lot of facts, but a lot of things you needed to know about it. Rather than some of the other modules which are more skills oriented. There seemed to be a lot of knowledge" (R.028)

"to what extent do you think learning is just about acquiring facts in this module?" (author)

"well, I s’pose they were facts in a way, but just, to have a good understanding generally of what was going on in education and politics as well, I think, for quite a lot of it. And the way things are developing. And I suppose there were some dates like acts, and things like that which you needed to know about and what was in them, so that you knew how it was developing (R.028)

"to what extent did you have to learn these facts?" (author)

"not learn them, because there’s no exam, so I didn’t feel that I needed to learn them, I felt as if I needed to know about them, that, that, if I had them somewhere, as long as I had them in my notes somewhere I could refer back to them while I did the assignment, but not actually need to have them to be able to ... I mean it was nice to know them, so if you were discussing anything in the seminar you could quote them, but it wasn’t necessary to have everything in your head have it in your notes and just refer back to it when you needed to. We just really needed to understand it rather than to know it off by heart, just understand it"
generally, what it means so that you could relate it to different things, rather than just knowing it" (R.028)

"can we just follow that up a bit, when you say understanding, what do you mean by understanding?"
(author)

"a difficult question that" (R.028)

"you said you don’t just need to know it, you need to understand it, Can you explain a little more about what you mean when you say understand?" (author)

"well I think in a lot of cases it's easy to learn an act or something like that, and to learn it off by heart, how its written in a book, but in this module you actually do need to understand what it means and how it relates to different areas, how things fit into the general scheme of things really, not just isolated facts, rather than just knowing it you need to have an understanding to be able to put it in to the assignment, because, you couldn’t just regurgitate facts or figures, it was more, I mean a lot of the time you used the lecture notes and things in the assignment, but you had to actually be able to explain them in your own words rather than just reeling off what you’ve been told. And know how to, I don’t know, use the notes to answer the question rather than just regurgitating notes, you actually had to be able to sift through them and find what was relevant and what wasn’t, and actually use those to argue a point, to put different points of view" (R. 028).

For this students the 'what' of learning transcends the mere acquisition of facts, she conceptualises learning as seeking meaning and relating different aspects of the knowledge base of the module. Her external horizon corresponds to the study context, but she does not suggest that the purpose of learning is to fulfil assessment demands. Whilst there is not a strong suggestion of constructivism within this discussion, the focus of the internal aspect of the 'how' of learning is on the learner whose perspective is the focal point of learning; it is the learner who argues the points and who suggest different perspectives. Thus knowledge is not seen as pre-packaged and immutable, but open to manipulation by the learner.
The necessity for the internal horizon to be learning activities in which meaning is gleaned from the material is implicit in all of the statements made by the module tutors on the modules where learning was categorised as conception D. The level one outcome module was taught by a team of lecturers who each gave independent statements, but who nevertheless concurred:

"I think it's really about, it's about getting hold of an enormous amount of information and analysing that information, selecting that information. Looking critically at that information. And all that information has a particular set of concepts and vocabulary about it, which is to do with education training..... I sort of start off at the beginning of the module, I say we are going to have loads of debates about education, but we could, we could have debates that aren't a million miles away from this about other aspects of kind of British society and British life. So you need to think about the underlying issues here. You know, the social issues, the political issues and the economic issues. Then, maybe we can get some interest out of transferring them into education" (Lecturer 1)

"oh, there must pick up an awful lot about the education system post 16.....We are giving them tools, we are giving them knowledge. We're asking them to learn, you know, we, we are providing them with the opportunity to pick up knowledge. But we are also giving them, hopefully, trying to get them to understand, to analyse and to be critical - that's how I see it" (Lecturer 2)

"there's a certain amount of content they'd expect to know, which is one level. There's an understanding, and an articulation of different views on that content, if you like - perspectives. There's an understanding that many things to do with people, involving people, are relative, and the complex nature of the issues. That's what I'd expect them to understand at the end of it, to varying degrees. I suppose that there's a factual element and there's also the point that things are never quite as straight forward as made out, there's different ways of seeing the same thing, the same facts" (Lecturer 3)
In these statements the 'what' aspect of learning is given less emphasis than the 'how' - although there are two references which suggest that learning is conceptualised as gaining meaning namely: 'getting hold of an enormous amount of information' and 'understanding....the complex nature of the issues'. But there are more suggestions as to how meaning will be conceptualised through action of the learner namely by: 'analysing that information'; 'looking critically at that information'; and by analysing and being critical. These strategies all 'centre' on learning activities and represent a directedness which Marton et al (1992, p. 289) suggest as going 'from the learner into the learning material'. Whereas having 'loads of debates about education' suggest a strategy which centres on the learning material from which the learner will grasp understanding. Another way of effecting the grasp of meaning, the structural aspect, the internal horizon of the 'how' of learning, is through fostering the ability to view the object of learning from the outside rather than from a subjective stance, thus the lecturers suggest: thinking 'about the underlying issues here'; an 'articulation of different views on that content'; seeing different perspectives; though 'different ways of seeing the same thing, the same facts'. Each of the three characteristics which are illustrated through the module tutors' statements correspond to Marton et al's (1992) taxonomy, and thus firmly place learning within the level one module in the category of conception D.

The conceptualisation of learning within the level 3 learning outcomes led module was placed within the same category. The module tutor first explains how he perceives the outcomes of the module:

"they are to understand, it is basically to understand what a system of appraisal is, to see different perspectives of appraisal, how it can be seen as, as accountability, professional development, managerial control, aspects of all three, how it can vary between, possible influencing factors. Now that was the basic gist of the module".

In describing the 'what' of learning visual metaphors which Marton et al (1992) suggest predominate in conceptions D, E and F can be appreciated. The module tutor emphasises that it is important to see different perspectives of appraisal', and how appraisal can be seen
from three aspects. The structural aspect, the internal horizon of the 'how' of learning is equally given priority through the reference to 'different perspectives' which he goes on to elaborate:

"I expect a formal sophisticated understanding of the fact that there are different perspectives. They need to understand the fact that you can have four arguments and you must not consider any of them wrong, they are different stand points of the same thing. Now in this module students need to articulates that, to know it, and present it very well to give a good level of intellectual argument."

As in the level one example this module tutor expects his students to gain meaning about appraisal - the 'what' of learning in this module - through the 'how' aspect which involves looking at the object of learning from without by appreciating that there are 'different standpoints of the same thing'; and by appreciating that there are no right or wrong answers. He gives more insight into how he conceptualises the grasping of meaning to take place in his module:

"they must have read, they must reference to show that they have read, they must be aware of how to do this. They must talk, they must present arguments. If they can't do that they don't understand their arguments. You can't totally understand an argument and not articulate it cos, if you can't articulate it, you haven't understood it properly. If they, I suppose, if they are just given facts if they have not understood that there's an argument in here, then there's a problem. They must understand that there is an argument. You know if they say here are the regs [regulations relating to appraisal] that's it, then that's not really good enough. You know they need to take it a bit further than that. Understand that there, there's a bit of a row here somewhere. Things are not straight forward as far as people in organisations are concerned They must get an inkling, even if they can't express it, you know what I mean. Even if they just say there is a difference here, even if they can't explain it clearly, that is something, that would get them to a D1. You've got to see there is a difference".

¹ refers to an assessment grade D and not a conception of learning.
There is a distinction here between the perception of the tutor for the level 3 module and of tutors for the level one module in terms of 'centering'. Whereas the level one tutors suggests that the primary centering in their module was on learning action from the learner into the material, this module tutor suggests a reverse directedness i.e. from the meaning found within the subject content to the understanding of the learner. Thus 'they must have read' (about appraisal); 'they must talk' (about appraisal); they must 'see there is a difference' (in the issues within appraisal); 'they must present arguments' (about appraisal) in order to derive meaning, in order be able to understand - to become critical and to analyse appraisal. Both represents manifestations of how learning action within this conception is perceived.

An analysis of the level 3 traditional tutor's comments about learning in his module provided an even more explicit example of centering of the 'how' of learning which, in this case, is from the meaning found within the practical aspects of the material to a more holistic understanding of the wider issues to which those practical issues relate:

"they [the students] need to become adept if you like at spinning off from, kind of practical, concrete things to do with learning or training, to some of the kind of debates that are generated, that those things themselves generate, or involve".

Implicit in this statement is this lecturer's perception of what learning is about in his module, he goes on to elucidate further:

"I think learning in this module is partly about learning about some of the views some of the concepts about learning and training, about how people learn, ideas about good practice in training, ....It's about practising, planning and preparing to train or teach people. But it's also about learning how to look critically at that, I think".

Whilst the practical, the application dimension of the module is apparent, the 'what' of learning is also described as acquiring knowledge of the concepts and theories related to the subject. This appears to place the perception within the quantitative half of the dichotomy and with the emphasis on application within category C.
However, the external horizon described here is not located specifically within the student's 'life-world', although it might be inferred as being so if the participants on the module are assumed to be intending teachers or trainers. On the other hand it might well be assumed that the external horizon relates to the study situation as the students are expected to apply the concepts and theories about training in a role play situation which is wholly confined to within the university - the module does not have a training or teaching experience. The external horizon therefore remains somewhat equivocal.

More significant and crucial is the reference to 'looking critically' at training techniques which implies more than just 'looking into the learning material' which Marton et al (1992) suggest is a characteristic of conceptions A, B, and C. Further probing during the interview revealed that the lecturer's perception of learning for the module transcended the quantitative dichotomy:

"so can you say a little more about what you mean by looking critically?" (author)

"the difference is between the levels [level 1, 2 and 3 of undergraduate study]. I think, it is about the extent to which students are pushed to think, critically and conceptually about the concepts and theories (lecturer)

"so is it a qualitative difference, or what? (author)

"yes yes yes yes I would hope that there would be, I would hope that they would be far more critical about the academic objectives, the ones to do with conceptualising you know criticising, synthesising, conceptually engaging in debates about, those things which in a sense are more conventional more academic. Different perspectives and skills I think, are over shadowed in by the fact that they have to plan and prepare this training event...... most of them don’t pay significant attention to these kind of academic objectives, to setting issues in an academic, more academically in a context" (lecturer).

Within this statement there is reference to a reverse directedness in the way in which the lecturer perceives the referential aspect of the 'how'
of learning centering on learning activities. He refers to the learner 'criticising, synthesising, conceptually engaging in debates' - the focus is primarily on learner action rather than the content of the module which was earlier suggested by a previous quotation. Thus centering is perceived as initially being on the 'practical, concrete' dimensions of the material - the content of the module - from which the learner 'spins off' and engages in acts of learning which facilitate a deeper understanding of the material. The second cycle involves widening the structural aspect so that the object of learning is seen from without, from 'different perspectives' which provide learners with the wherewithal to have a 'view of things'. Thus the perception of learning of the level 3 lecturer of the traditional module was categorised as conception D.

4.3.4 Conception E (Learning as seeing something in a different way)
The classification of the perception of the level 2 lecturers on the traditional module was more problematic. When asked what learning was about in the module the 'what' of learning was described by the module leader and corroborated by the module team:

"well I suppose, fundamentally, learning for the students is about getting their head round issues surrounding x [the subject of the module] across the age range, across the life span. So that the outcome is an awareness, an ability to develop thinking skills so that they can critically appraise what is actually happening, in special needs in society and in schools and in further education. Would that be how you see it?" (module leader)

"yes, certainly at this level, it's very much a general view about what x means at all levels for all people in society" (module tutor)

"I think that they begin to develop their own philosophy of x in life generally" (module tutor).

The oft used term 'awareness' implying the acquisition of facts, information and knowledge is also reflected in gaining 'a general view' about x, both of which are redolent of a quantitative conception of learning. But this is further qualified by the conceptualisation of the
first respondent who suggests that learning in the module is a process of grasping meaning and understanding 'getting their head round issues' which firmly places the 'what' of the conception within the qualitative half of the dichotomy.

The three quotations above also illuminate how the external horizon of the referential aspect of the 'what' of learning is perceived. Unlike conception D, where the horizon is confined to the study situation, in this module this clearly extends beyond to schools and further education, to society and to 'all people in society'. The scope is wide; encompassing the complete age range and the whole 'life span' to the extent that students are expected to 'begin to develop their own philosophy of x in life generally'. The underlying thrust is that alternative perspectives are deemed to be a very significant dimension of learning such that 'looking at' dominates suggesting conception E (Marton et al, 1992), the principal feature of which is the location of the external horizon.

The 'how' of learning in conception E is seen by Marton et al (1992) as forming a pair with conception D, the former being predominantly concerned with application and the latter with developing a conception of something. In conception E, the structural aspect of the 'how' of learning becomes a more generalised skill so that the learner becomes able to apply these skills to new situations and consequently sees things differently. This aspect is apparent in the following discussion with the module team:

"We're expecting synthesis, critical analysis and a deeper awareness if you like, an ability to really use information really in a very sophisticated fashion" (module leader)

"Can I ask you what you mean by use, information in a sophisticated way? (author)

"Using a variety of text, and sources of information, and being able to rationally use that to great effect. Well, I mean I suppose a sort of my aim, whenever I teach, whether it's at level 1, 2, or 3 is to further the thinking skills of students. Cos if they can think and apply that thinking to whatever the context of their
thoughts, then frankly they are learning."

This conceptualisation of learning as application is not synonymous with the synthesis of theory and practice which characterises professional courses; this distinction is made by the module team:

"so are you expecting students to relate the theory to practice in this module?" (author)

"not to the same extent [as in other modules] at all because the way the module is assessed is quite different from the B.Ed. Where they are able to relate theory to practice it’s, it’s super, and some of them have very effectively. But it’s not what we expect" (module leader)

"but that’s been their choice it hasn’t been our expectation has it?" (module tutor)

"no" (module leader).

The predominant feature of this conception according to Marton et al's taxonomy remains change, "the learner is changing his or her way of thinking about something, changing the conception of something" (1992, p. 290). This is implicit in the appropriation and application of advanced thinking skills which is seen, by the team, as integral to this module. The conception of learning of the lecturers on the level 2 traditional module was thus categorised as E.
4.4. To what extent do students have a more qualitative conception of learning when studying learning outcome as opposed to traditional modules?

An analysis of the responses representing each conception of learning held by students on the learning outcome-led modules (Table 4.2) shows that the majority of students taking learning outcome-led modules (50.6%) saw learning as the acquisition and/or application of the knowledge of others, that is of pre-packaged material (conceptions B and C). That is to say that the majority of respondents held a conception of learning in their module which is essentially of a quantitative nature (conception A, B, C)

Table 4.2: Students' Conceptions of Learning on Learning Outcome-led Modules

<table>
<thead>
<tr>
<th>Conceptions of learning</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of responses level 1</td>
<td>0</td>
<td>16</td>
<td>4</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>45</td>
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<tr>
<td>% of responses level 1</td>
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<td>8.9</td>
<td>55.6</td>
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<td>0</td>
<td>100</td>
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<tr>
<td>No. of responses level 2</td>
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<td>1</td>
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<td>0</td>
<td>19</td>
</tr>
<tr>
<td>% of responses level 2</td>
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<td>10.5</td>
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<td>100</td>
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<td>No. of responses level 3</td>
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<td>15</td>
<td>1</td>
<td>0</td>
<td>21</td>
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<tr>
<td>% of responses level 3</td>
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<td>71.4</td>
<td>4.8</td>
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<td>100</td>
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<tr>
<td>Total number of responses</td>
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<td>21</td>
<td>41</td>
<td>1</td>
<td>0</td>
<td>85</td>
</tr>
<tr>
<td>% of responses</td>
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<td>25.9</td>
<td>24.7</td>
<td>48.2</td>
<td>1.2</td>
<td>0</td>
<td>100</td>
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This is consistent with the findings of Taylor (1994, p. 72) who found that 53.8% of all undergraduate students in his sample held a quantitative conception of learning and with Van Rossum and Schenk (1984, p. 79) who found that a large number of first year undergraduate students in psychology began their HE studies with a "reproductive learning conception". In contrast, the data from the traditional modules (Table 4.3) shows that 78.9% of all respondents were found to hold a quantitative conception (B or C) of learning in their modules. This percentage is considerably higher than both the findings of Taylor and the data from the learning outcome-led modules which suggests that students have a more qualitative conception of
Table 4.3: Students' Conceptions of Learning on Traditional Modules

<table>
<thead>
<tr>
<th>Conceptions of learning</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>Total</th>
</tr>
</thead>
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<td>No. of responses level 1</td>
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<td>3</td>
<td>6</td>
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<td>5</td>
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<td>0</td>
<td>33.3</td>
<td>66.7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Total number of responses</td>
<td>0</td>
<td>27</td>
<td>18</td>
<td>11</td>
<td>1</td>
<td>0</td>
<td>57</td>
</tr>
<tr>
<td>% of responses</td>
<td>0</td>
<td>47.3</td>
<td>31.6</td>
<td>19.3</td>
<td>1.8</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

learning when studying outcome-led modules than they do when taking traditional modules.

This disparity will be analysed further. An investigation into the conceptions of learning held by the module leaders for all of the undergraduate modules shows that one module leader on the traditional and one on the outcome-led modules defined learning in their module as being consistent with conception C, (Table 4.6). It might be argued that the percentage of students on the modules having a quantitative conception of learning can be explained by students holding a conception consistent with that of their lecturer. This would affect 22.3% of all students on the learning outcome-led modules and 38.5% of students on the traditional modules, which might, in part, account for the higher percentage of students taking traditional modules holding a quantitative conception of learning. However the findings show that whilst 17.6% of all respondents on the learning outcome-led level 2 module did hold a conception of learning consistent with that of their lecturer, namely conception C; only 5.2% of the level 1 traditional module shared their lecturer's conception of learning in that module. Thus the higher proportion of students holding a quantitative conception of learning on the traditional modules cannot be explained by their conception being congruent with that of their lecturer.
An analysis of the proportion of students holding a quantitative conception of learning show that none of the level 1 undergraduate students on either the learning outcome or the traditional modules were categorised in conception A in which increasing one's accumulation of immutable knowledge is seen as the sole purpose of learning (Table 4.2 and Table 4.3). These data are at variance with that of both Taylor (1994), who found that 19% of undergraduate students saw learning as a process of gaining more knowledge, and Van Rossum and Schenk (1984, p. 82) who found that "a large number of students begin their study with a fundamentally reproductive learning conception". It is perhaps even more notable given that Taylor's sample was taken across all years of undergraduate study from a variety of subjects, whereas these data refer only to first year undergraduate students where a more quantitative conception of learning might well be expected. An analysis of the responses from all three years of undergraduate study on both the learning outcome-led and traditional modules also shows that none of the responses from the 142 respondents (Table 4.2 and Table 4.3) were classified in conception A. This suggests that although respondents do see learning in their modules as about increasing knowledge through a process described by Marton et al "picking up, taking in and storing" (1992, p. 285) none see learning as purely being about what Marton et al (1992) refer to as 'consumption', it is rather consumption for a purpose and that purpose is assessment. It could be argued therefore that undergraduate students at the University are too preoccupied with an achieving approach, with the gaining of credits to see learning in any of their modules as being located within conception A. In terms of the taxonomy of conceptions, students studying on both types of modules can be said to have a more qualitative conception of learning than the respondents in Taylor's (1994) data, but an analysis of conception A does not account for the discrepancy between students taking the learning outcome-led and traditional modules.

The proportion of students from each group whose responses are coded as representing conception B reveals a marked difference between the two types of modules. 25.9% of students on learning outcome-led modules and 47.3% on traditional modules (Table 4.2 and Table 4.3) fall into category B which is represented by seeing learning as acquiring and reproducing or accessing knowledge to fulfil assessment
requirements. The percentage of students taking traditional modules who hold a conception B can be seen to decline as the level of study progresses (Table 4.4) suggesting that perceptions of learning in the traditional modules become more qualitative through to final honours year study. This pattern is not replicated on the learning outcome-led modules where a high proportion of the students holding conception B are at level 1 (72.7%) and the proportions at level 2 is 9.1% and level 3 18.2% (Table 4.4).

Table 4.4: The Percentage of Students at Each Undergraduate Level With a B Conception of Learning on Learning Outcome and Traditional Modules

<table>
<thead>
<tr>
<th></th>
<th>level 1</th>
<th>level 2</th>
<th>level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome-led modules</td>
<td>72.7%</td>
<td>9.1%</td>
<td>18.2%</td>
</tr>
<tr>
<td>Traditional modules</td>
<td>48.18%</td>
<td>33.3%</td>
<td>18.5%</td>
</tr>
</tbody>
</table>

However the proportion of students on part 2 of their degree (levels 2 and 3) with a conception B is much lower on the learning outcome-led modules than it is on the traditional modules, and conversely the proportion at level 1 is higher than on the traditional modules, although the difference between the outcome-led and the traditional modules is not statistically significant using a chi-square analysis. The high incidence of level 1 students holding a conception B on the outcome-led module is discussed in 5.7. Taking the two quantitative conceptions A and B, the proportion of students on learning outcome-led modules who fall in this category (25.9%, see Table 4.2) is both lower than that of students on traditional modules (47.3% see Table 4.3) and also lower than the research reported by Taylor who found that 37.5% of respondents were classified as either conception A or B (1994, p. 72). This data supports the hypothesis that students on learning outcome-led modules hold a more qualitative conception of learning than students on traditional modules.

The discrepancy between respondents' classification of conception B on learning outcome-led and traditional modules is not replicated in respect of conception C. 24.7% of students taking outcome-led modules and 31.6% of students on traditional modules (Table 4.2 and Table 4.3)
Table 4.5: The Percentage of Category C Students at Each Undergraduate Level on Learning Outcome and Traditional Modules.

<table>
<thead>
<tr>
<th></th>
<th>level 1</th>
<th>level 2</th>
<th>level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome-led modules</td>
<td>19.0%</td>
<td>76.2%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Traditional modules</td>
<td>16.7%</td>
<td>27.8%</td>
<td>55.5%</td>
</tr>
</tbody>
</table>

were placed in category C. 16 out of the 21 students (76.2%) taking learning outcome-led modules who held a conception C were studying the level 2 module, where there is a distinct cluster of respondents (Table 4.5). The high proportion of respondents on this module who saw learning as applying knowledge and procedures is wholly consistent with the perception of learning held by the module leader and with the outcomes of the module (see Appendix 6) which state unequivocally that this module requires students to apply the principles and procedures of educational research to a piece of small-scale research.

The clustering around conception C in the level 2 module is congruent with the module leader's conception of learning which has been both identified and internalised by participants on the module. This explains the high proportion of students placed in category C on this module and the consequent low incidence (1 respondent out of 19 respondents) of conception D at level 2 in relation to both the level 1 (25 out of 45 respondents) and level 3 modules (15 out of 21 respondents) (see Table 4.2). These data are out of kilter with Taylor's research (1994) in which only 16.3% of all undergraduate students were allocated to this category, in respect of both the extent of the clustering around a single category, and also the very low incidence of conception D on the level 2 outcome-led module.

Analysis of the questionnaire data for conception C shows clustering at level 3 (Table 4.5) for the traditional modules as opposed to level 2 for the learning outcome-led modules. The learning expected by the module tutor of the traditional module was categorised as being conception D (Table 4.6); the cluster cannot therefore be explained by the consonance between student's and lecturer's conceptions of learning.
which is suggested by the outcome-led data. Thus whilst the overall proportion of students on each type of module who have been categorised as having conception C is comparable, there is a highly significant difference (Chi-square = 13.115 Degree of Freedom (df) = 2 probability (P) = >0.001) between the distribution of these students across the undergraduate levels.

An analysis of the data for conception D confirms the assertion that students taking learning outcome-led modules have a more qualitative conception of learning than students on traditional modules. 48.2% of all respondents on learning outcome-led modules were classified as having a conception of learning consistent with category D compared with 19.3% of all students on traditional modules. (Tables 4.2 and 4.3). This represents a highly significant difference (Chi-square = 17.993 df = 2, P = 0.000). Whilst the data for the learning outcome-led modules is comparable with Taylor’s data which suggest an overall percentage of 38.1% of respondents falling in this category (1994, p. 72), the proportion of students in category D taking learning outcome-led modules was considerable higher than for the traditional modules at the University. The findings show that there were two clusters of respondents namely at level 1 and level 3 which corresponds to the perception of learning held by the module team for the level 1 module and by the module leader of the level 3 learning outcome-led module (Table 4.6). In contrast none of the level 3 students on the traditional modules were deemed to hold a category D conception of learning and out of the 11 students (from a total of 57) who were assigned to this category 6 were taking a level 1 module and 5 a level 2 module (Table 4.3).

When conception E is taken into account, then the data shows that a total of 49.4% of students on outcome-led modules and 21.1% on traditional modules held a qualitative conception of learning, data which again supports the assertion that students on learning outcome-led modules have a more qualitative conception of learning on their modules that do students on traditional modules. The findings for the outcome-led modules are, slightly higher than those of Taylor (the only published research in this area) who found that 46.1% of all undergraduate respondents held a qualitative conception of learning (1994, p. 72). Taylor’s data include 5.6% of his respondents in the category of
conception E and 2.4% within conception F, compared with 1 response from the 85 students taking a learning outcome-led module and 1 response from the 57 students taking traditional modules who held conception E and no respondents in either group who were deemed to hold conception F.

The findings suggest that there is a lower proportion of respondents studying learning outcome-led modules than traditional modules who are categorised as holding a quantitative conception of learning. This is accounted for by the higher proportion in category B on the traditional modules at all three levels of undergraduate study. Whilst the proportion assigned to category C is comparable, the respondents cluster around conception C at level 2 on the outcome-led modules and level 3 on the traditional modules. A higher proportion of respondents hold a qualitative conception learning on outcome-led modules than traditional modules. This is marked at level 3 where none of the respondents on the traditional module were categorised as having a conception of learning consistent with category D. These findings support the hypothesis that students taking an outcome-led module hold a more qualitative conception of learning that students on traditional modules and challenges Morgan's assertion that students' understanding of learning 'becomes more sophisticated over time' (1993, p. 58).
4.5 To what extent is there congruence between students' and lecturers' perceptions of learning in learning outcome and traditional modules?

4.5.1

A summary of the lecturers' conceptions of learning

Table 4.6 below summarises how the module lecturers perceive learning in the outcome and traditional modules. In the level 1 outcome-led module and the level 2 traditional module a team of lecturers was involved in the delivery. There was congruence between the conceptions held by each member of the team about learning in their modules.

Whilst the taxonomy of conceptions first put forward by Van Rossum and Schenk (1984) is seen as being hierarchical with each conception subsuming those that precede it, the principal distinction is between the quantitative and qualitative dichotomy i.e. between conceptions A, B, and C and D, and E (see 2.4.2). This is represented in Table 4.6 by the shaded area encompassing conceptions D and E. None of the lecturers expected their students to hold a conception of learning consistent with Van Rossum and Taylor's (1987) 'F' category and therefore this has been omitted from the table. Whilst 4 out of the 6 modules are located within the qualitative half of the dichotomy the hierarchical nature of the taxonomy is not replicated through the levels of undergraduate study which are themselves hierarchical - theoretically becoming more complex from level 1 through to level 3.

Table 4.6:
Lecturers' Conceptions of Learning in the Learning Outcome and Traditional Modules

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome modules</strong></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>level 1</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>level 2</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>level 3</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Traditional modules</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>level 1</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>level 2</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>level 3</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

[The shaded area highlights the qualitative categories]
The in-depth analysis of the level 2 outcome-led module and the level 1 traditional module, which are both located by their module leaders within the quantitative half of the dichotomy, has shown unequivocally that the lecturers' perceptions are consistent with the categories as they are defined in the taxonomy and to which they have been assigned. Both modules are seen as introductory modules, the former to give a grounding in research methodology and the latter to introduce students to the theory of language acquisition. Both are primarily concerned with the application of knowledge and information. The extent to which this should be perceived as being consistent with a quantitative conception of learning is not pertinent to this thesis.

4.5.2 A Comparison of Students', and Lecturers' Conceptions of Learning on Outcome-led and Traditional Modules.
An analysis of Table 4.7 suggests that students on both types of modules share perceptions of what counts as learning on these modules as indicated by the clustering of the coded responses from the questionnaires around certain conceptions of learning. There are four distinct clusters with respect to the learning outcome-led modules around conception B and D at level 1; conception C at level 2; and conception D at level 3. This is also apparent to a lesser extent on the traditional modules where clusters can be identified around conception

<table>
<thead>
<tr>
<th>Conception of Learning</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome-led modules</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 1</td>
<td>0.0%</td>
<td>35.6%</td>
<td>8.9%</td>
<td>55.6%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Level 2</td>
<td>0.0%</td>
<td>10.5%</td>
<td>84.2%</td>
<td>5.3%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Level 3</td>
<td>0.0%</td>
<td>19.0%</td>
<td>4.8%</td>
<td>71.4%</td>
<td>4.8%</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Traditional modules</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 1</td>
<td>0.0%</td>
<td>59.1%</td>
<td>13.6%</td>
<td>27.3%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Level 2</td>
<td>0.0%</td>
<td>45.0%</td>
<td>25.0%</td>
<td>25.0%</td>
<td>5.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Level 3</td>
<td>0.0%</td>
<td>33.3%</td>
<td>66.7%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

[Shaded boxes indicate the conception of learning held by the module team/tutor for each of the modules]
B and D at level 1; conception B at level 2; and conceptions B and C at level 3. However the crucial distinction lies in how students and lecturers perceive learning in these modules and whether the clusters represent dissonance or congruence between the lecturers' and their students' conceptions of learning in the modules.

As can be seen from Table 4.7 the percentage of students on the learning outcome-led modules who share the same perception of learning as their module tutor is high being 55.6% (25 students), 84.2% (16 students) and 71.4% (15 students) at levels 1, 2 and 3 respectively. These data contrast sharply with the 13.6%, (3 students ) 5.0% (1 student) and 0.0% of students on traditional modules who held conceptions of learning congruent with those of their lecturers. These findings suggest that there is more congruence between students' and lecturers' conceptions of learning on learning outcome than on traditionally designed modules, although the values are small and statistically there is no significant difference between the two groups (chi-square analysis = 1.825, df = 2, probability = >0.402).

However when the data relating to the level of dissonance between lecturers' and students' conceptions are analysed (Table 4.8) there is a significant difference between the number of students who held different conceptions on learning outcome and traditional modules, suggesting that the outcome-led model of design has led to less of a mismatch between the way students and lecturers perceive learning.

**Table 4.8: Summary of the Level of Dissonance Between Students and Lecturers' Conceptions of Learning**

<table>
<thead>
<tr>
<th></th>
<th>level 1</th>
<th>level 2</th>
<th>level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome-led module</strong></td>
<td>20</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td><strong>Traditional module</strong></td>
<td>19</td>
<td>19</td>
<td>15</td>
</tr>
</tbody>
</table>

[chi-square analysis = 9.888, df = 2, probability = >0.007]

59.1% (13) of students on the level 1 traditional module, 70% (14) of students on the level 2 traditional module and 100% (15) of students on the level 3 traditional module held conceptions of learning which were in a lower category than the perceptions of their lecturers, whereas on
the learning outcome-led modules only 44.5% (20), 10.5% (2) and 23.8% (5) of respondents at levels 1, 2, and 3 respectively held a less qualitative conception of learning than was held by their lecturers. These findings both confirm Morgan's (1993) assertion that lecturers are likely to hold a more qualitative conception of learning than their students hold, and support the hypothesis that students on learning outcome-led modules are more likely to hold the same conception of learning as their lecturers than students on traditionally designed modules.

4.5.3 Summary
The first five research questions have addressed the findings relating to the students' awareness of the learning outcome-led module design and the extent to which there is congruence between students' and lecturers' perceptions of learning on outcome-led and traditional modules. The remaining two research questions relate to data concerned with identifying the curriculum design features which influence how students perceive learning; these will be considered in the next chapter.
Chapter 5

Presentation and Analysis of Data (2) The Design Features Influencing How Students Perceive Learning

5.0 Results and discussion

Data informing the following research questions are presented and discussed in this chapter:

1. What are the curriculum design features influencing students' perceptions of learning on the traditional and outcome-led modules?

2. What evidence is there that the design features identified through the factor analysis influence students' perceptions of learning?

5.1. What are the curriculum design features influencing students' perceptions of learning on the traditional and outcome-led modules?

An exploratory factor analysis was undertaken to identify the main constructs which account for the correlations between the items in the Likert questionnaire. These items, which represent the design features deemed by students and lecturers to influence how learning is perceived in a given module, were identified from three data sources: (i) the conceptual mapping surveys; (ii) the focus group interviews; (iii) the interviews with lecturers. The findings relating to the identification of these factors will be first presented and discussed.

5.1.1 The identification of the design factors which students perceive as influencing how they view learning.

Data from the focus group interviews and more specifically the conceptual map surveys corroborate Biggs (1990 b) suggestion that "at presage students' conceptions of learning and teaching may be changed by what they see of the teaching context" (p.14), Eizenberg's (1986) assertion that students' approach to learning are influenced by the learning environment in which they find themselves and Gibbs's (1992a) conclusion that students respond strategically to the demands of a course. The surveys resulted in 9 broad features being identified (Table 5.1) as being influential in shaping how students perceive learning in a given module. These features, which were the source of the variables for the questionnaire will now be discussed in detail.
Assessment criteria are seen as important because they provide a clear focus; 44 out of the 73 respondents citing assessment criteria as influencing how they perceived learning. This emphasis on assessment corroborates Boud's assertion (1993) that the "assessment tail wags the dog of learning". Research undertaken by Entwistle, Marton and

**Table 5.1 The Design Features Identified by The Conceptual Mapping Survey**

<table>
<thead>
<tr>
<th>Design Feature</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear assessment criteria</td>
<td>44</td>
</tr>
<tr>
<td>Clear outcomes</td>
<td>44</td>
</tr>
<tr>
<td>Module guide</td>
<td>44</td>
</tr>
<tr>
<td>Comprehensive reading list</td>
<td>37</td>
</tr>
<tr>
<td>Clear assessment tasks</td>
<td>34</td>
</tr>
<tr>
<td>Taught sessions</td>
<td>21</td>
</tr>
<tr>
<td>Weekly programme</td>
<td>16</td>
</tr>
<tr>
<td>Congruence between outcomes/assessment/sessions</td>
<td>13</td>
</tr>
<tr>
<td>Self-assessment</td>
<td>9</td>
</tr>
</tbody>
</table>

[Total number of respondents = 63: 29 on traditional modules and 34 on learning outcome-led modules]

Ramsden (1988) suggest that students work to produce the outcomes which they think will be assessed, by Ramsden (1991) that assessment régimes influence students' conceptions of learning and by Gibbs (1992 b) that the nature of assessment tasks provide students with signals about the approach required. Assessment can thus provide students with information regarding both the *what* and the *how* of the learning outcomes. 29 focus group respondents stated that assessment criteria were important because they "show what is expected of you", (author's emphasis), this does not mean that the process, the *how* of learning is not indicated by the assessment criteria, rather that students use 'what' in common parlance to encompass both the outcomes of learning (the *what*) and the process of learning (the *how*) as the following comments illustrate:
"they give you direction, they tell you where you need specific facts, where you need to be analytical"
(Conceptual Mapping Survey (CMS) Respondent 9)

"clear assessment criteria at the outset of a module promotes a clear understanding of the expectations of you and the expectations you should have of yourself"
(CMS, 17)

The importance of the criteria in indicating the how of learning was identified and emphasised by the level 3 outcome module tutor who suggested:

"the criteria should say we are looking for different perspectives, we’re looking for critical, analytical analysis we want you to show understanding, we want you to make links between this and that".

Closely linked to the assessment criteria is a statement about the assessment task for a module which is viewed by respondents as being equally influential in providing a clear focus and direction for learner action:

"the clear statement of the assignment tasks tells us what is expected of us and we can focus our learning straight away and start working earlier" (CMS, 52),

"the statement of tasks at the beginning of the module are important because they give you the chance to learn in depth rather than rushing your work at the end of a module" (CMS, 41).

It might, however, be suggested that the very design features that influence students, provide such a strong cue as to the nature of learning in a module, that they serve not only to form students’ perceptions, but, in some cases, to fuel an achieving approach to learning as identified by Entwistle (1988). A number of respondents imply this in their comments relating to the influence of the assessment criteria and tasks:

"the criteria tell you what is needed for each grade, you try to fulfil the criteria to get the best grade"
(CMS, 54),

184
"such information on what to learn and how to obtain grades gives you the possibility to achieve the best grade you can through the availability of the grade system and the criteria" (CMS, 38),

'I take the assessment criteria and work around them, they give a clear indication of what I need to know to do the assignments" (CMS, 59).

Such inferences may be drawn to a lesser extent from the data in respect to the self-assessment tasks which featured in the focus group discussions where some respondents saw assessing themselves as related to improving their module grades:

"self-assessment helps because you have to look at the criteria and outcomes you should achieve before writing what points you want to think about" (CMS, 12),

"structured self-assessment shows what is expected of us for assessment" (CMS, 30)

But all of the 9 respondents who cited self-assessment, also commented that the process both helped them to think about the how of learning and to take stock of their own achievements:

"assessment of myself helps me to highlight what problems I am having" (CMS, 15),

"self-assessment helps me to see where I'm going wrong and to think about my learning" (CMS, 19)

"self-assessment helps you to think about what learning is in the module" (CMS, 29),

"you can ask the lecturer to comment on anything you feel you want feedback on in your essay" (CMS, 18)

The process of self-assessment contributes to clarifying what learning is about in a module and also it is a means of fostering learning activities in response to the module learning experience. Although it was cited as being influential by a relatively small number of respondents (Table 5.1) an item relating to this design feature was included in the Likert
questionnaire consistent with the principle of sampling variables widely (Kline, 1994).

In contrast, learning outcomes were felt to be influential by 44 out of the 63 focus group respondents (Table 5.1) and 76% (26 respondents out of 34) of respondents studying outcome-led modules, informing students of what is expected throughout the module and guiding their learning:

"the outcomes, direct, guide, channel and focus you" (CMS, 45),

"the outcomes give you the structure for your learning" (CMS, 43),

and as with the assessment tasks and criteria:

"the advantage is that you get to know right at the start what learning is meant to be so that you can prepare well in advance" (CMS, 12).

This is consistent with Ramsden's (1992) research which led him to assert that clear goals are an "important element of an effective educational experience" (p.127). A small number of respondents commented that the outcome statements also indicate the level of the module, specifically achieved through an appreciation of the generic academic outcomes. But outcome statements were more widely perceived as furnishing detailed information about the nature of learning; this is felt to be advantageous because they reduce the level of stress:

"there's no uncertainty, no anxiety about what learning is in these modules" (CMS, 36),

"the outcomes give a detailed description, this keeps the students focused on what needs to be learnt and reduces the anxiety in learning" (CMS, 40),

"when the criteria are clear and understandable there is no uncertainty and stress" (CMS, 36).
Such comments contrast starkly with those made by students from traditional modules in the focus group interview, who bemoaned the lack of clarity in their modules:

"it affects you an awful lot because if you don't understand where you're going then you feel inadequate in your self and then you cannot be bothered to learn because you don't want to feel inadequate" (focus group respondent), if the outcomes are clear and I understand them it helps, there's a structure there. Whereas if it isn't clear and I don't really understand what they want from me what learning is supposed to be then I just find it totally off putting" (focus group respondent).

One respondent from the level 2 traditional module was most eloquent in describing the dilemma of some participants who experienced difficulty in getting to grips with what learning was about in their module:

"I have spoken to people on this module who think 'what the hell's going on?' we have only got another three weeks left and I don't know where I'm going or anything. If we are going to have modules like this we need an escape clause and an ejector seat or a parachute or something for people. When you feel unsure you look around and you feel even more nervous or worried about going to speak to someone about it"

These data are consistent with Säljö's (1988) findings that students react to their own interpretation of the situation in which they find themselves and with Biggs's assertion (1990 b, see figure 2.14) that students' perceptions of contextualised learning outcomes influence their beliefs about their own capacity to learn. More precisely it seems that the clarity of direction in learning provided by the outcome-led design reduces students' anxiety about their potential to effect the outcomes and this in turn influences their motivation to learn. This hypothesis which is grounded in the student survey data was also suggested independently by the level 3 outcome module tutor during his interview:

"I think if they [his students] understand where they're going, if they feel comfortable, if they are not lost, if
they can see what they're working towards I think they'll learn. If there's no clear organisation, they feel threatened they feel lost, they feel isolated. And they'll stay in bed".

Assurance derives equally from the link between the outcomes, the assessment tasks and the criteria a number of students appreciating the scaffold, the framework for learning which is thereby provided:

"the learning outcomes link directly with the assessment tasks and criteria" (CMS, 36)

"the learning outcomes, the assessment tasks and criteria are crucial, in my view, to giving a pathway, a direction for learning" (CMS, 32).

The influence of these design features was succinctly summarised by a focus group respondent who suggested that in an outcome-led module:

"I feel more in control and I feel more comfortable. I think just feeling the whole thing that everybody has discussed, the way you we've got supports, you know without being told. If you use it properly it's a very valuable experience" (focus group respondent).

A further 'support' is the close link between the outcomes, the assessment and the taught sessions which 10 out of the 34 students taking outcome-led modules commented on. Several respondents suggested that the result of the congruence of the design was that the outcome-led model, as well as promoting an achieving approach, also serves to foster a deep approach to learning (first identified by Säljö, 1979) as illustrated by the following comments:

"if the module is structured in logical lectures that fit with the outcomes and the assessment, then the whole module begins to piece together and the whole picture is formed, this promotes more in depth learning" (CMS, 17),

"the outcomes, the sessions, the assessment connect, this allows me to follow what is being taught and I can understand the total of what to learn" (CMS, 40)
"the seminars are linked to the lectures and to the directed time and the outcomes, you can discuss and see if you have understood" (CMS, 37),

"one lecture leads into or follows on to another, this is very significant. The lectures are used in such a way that all the theories are interrelated to each other. They are then backed up by reading from the module guide and by the assessment, it all makes sense" (CMS, 18),

"I think that you make more effort to learn if you know that say one week you learn something and you know that next week it's going to be relevant so you take greater effort to take it all in and understand it." (focus group respondent).

The analogy of 'building' was used by a number of respondents notably in this extract in which the students suggests that the outcome design has influenced his learning by giving him confidence to both build and diversify:

"I find if I've got something to aim for, if I learn that then my interest for other things sort of develops from that. So if I learn with the outcomes it makes you think that well what's caused this and that, and I find that my learning sort of branches out from that. Whereas if I haven't got anything to aim for I sort of waver, I don't settle. It's [learning] like a building block, it builds up". (focus group respondent)

The notion of 'building' was also echoed by the module tutor for the level 2 outcome module who suggested:

"The congruence between outcomes, the sessions and assessment is definitely influential, because they all contribute to building up learning in the module".

This is not to confuse this idea of building with that referred to by Entwistle (2.4.1) in which he described constructivism as the opposite of seeing learning in incremental terms like 'bricks in a wall'. Rather the analogy of building used here describes the active process of seeing learning holistically of appreciating strands and links and relating new learning to previous knowledge. This is an important facet of 'deep
learning' which modularity can militate against by atomising learning and promoting fragmentation rather than congruence.

In the traditional modules, where congruence is not a necessary prerequisite of the design and where the outcomes of the module are not made transparent, then a surface approach (Säljö, 1979) is frequently described by learners. In respect to these modules respondents referred to 'flitting', 'doing a broad sweep', 'jumping from one thing to another' - metaphors which are the antithesis of building, of constructive activity. One focus group respondent describes the effect of this:

"If I know I've got to do a broad sweep for an assignment I just put it off. Cos, I just don't know where to focus, I don't know where to start and I just can't face it. Whereas, with outcome modules, you can actually structure your planning for your assignment your reading and the sessions. You think well this bit I'll look at today or tomorrow, or when ever, and you can actually go and pick what you want in a more constructive manner. But, a broad sweep is a nightmare".

These data corroborate the findings of Gibbs (1992a) that if students are unclear about what learning is required, then they tend to adopt a surface approach to learning. As well as influencing students' approach to learning the coherence of the design also serves to clarify the focus of learning, reinforcing the messages conveyed through the outcomes and the assessment tasks:

"the sessions fit with the study time reading, and the assessment. This gives me a clear idea of what to learn" (CMS, 35),

"the direct relationship between the module and the sessions and the outcomes makes learning clear" (CMS, 45),

"the key points in the sessions relate to the outcomes and the assessment, this makes things clear" (CMS, 5).

But not all respondents were conscious of the holistic design represented by the outcome model, although this lack of articulation of awareness
does not necessarily preclude the existence of accordance between the outcomes, the sessions, the assessment and directed time from shaping how they perceive learning in a module. For many the more tangible and discrete features of the design were cited as being influential. The taught sessions were singled out by 21 out of the 63 respondents (Table 5.1) as influencing students' perceptions of learning. The clarity of the structure of the lecture was deemed to be particularly significant being noted by a number of respondents as facilitating learning for example:

"if the structure is clear then we can follow the lecture and learn from it " (CMS, 2),

"we need to be able to follow the lecture to understand the key points to learn" (CMS, 5),

"when the lecturer makes key point clearly, then this gives us clues about learning in the module" (CMS, 44),

"listening to a clear lecture helps us to decide what we are supposed to be learning" (CMS, 54),

"in Education going to lectures counts as they are structured and relevant to the outcomes" (CMS, 52),

Taught sessions were also referred to indirectly through the weekly programme, which was cited by 16 out of the 34 respondents on learning outcome-led modules (Table 5.1), 10 of these respondents referred directly to the session schedule which they suggested informed their planning and preparation for the sessions, two examples being:

"the weekly programme assists me in preparing for classes " (CMS, 40),

"the programme lets us know what to study in order to be prepared for the following weeks" (CMS, 41).

The guided directed time provided through the weekly programme in the outcome-led modules was cited by many respondents as both important in terms of the motivation to learn and to become more involved in the taught session. This design feature informs learner
action and seems to lead to greater involvement deriving from the confidence that students feel that they gained because they have more to contribute to sessions, their preparation equipping them with appropriate knowledge and facilitating their understanding, as two focus group respondents explain:

"because we’ve got study time, very specific study time, when you come to the next lecture you know what you’re going to be doing this helps you to understand the structure of the module. It helps you to get involved in the lecture, which is important for me. Because there is nothing worse than sitting there for three hours not saying anything (focus group respondent),

"if you know what you're doing in the next week then you can prepare for that and you can contribute more to the lecture and you just develop each week. Your own ideas start springing up and you’ll speak in the lecture as well. I think that you make more effort to learn if you knew that say, one week that you learn something and you know that next week it’s going to be relevant so you take greater effort to take it all in, to make links and to understand it" (focus group respondent).

This suggests that the guided study time informs the how of learning and serves to promote a deep approach, by encouraging students to take responsibility for their own learning and to seek connections between concepts and ideas presented in the taught sessions. It also corroborates Schmeck’s (1988) assertion that the way students go about learning is dependent on what they perceive learning to be.

Modularity presents specific challenges arising from the fact that students are brought together for the first and only time as a group to share a learning experience which lasts only 15 weeks. The study time programme is seen as providing common ground and a shared perception about learning in the module. One level 3 student taking an outcome-led module was particularly eloquent in describing how this influenced his learning and why this was so influential:

"all of the discussion has been very useful in this module, and the reason it has been useful is through the
study time. Someone mentioned earlier that coming here you know you're going to work for the whole session. But you also know that you will be making a contribution and that we will learn from each other. I read things but read them differently to other people in the group and we can learn from other opinions. We help each other. Things that have been said in the group make you think, well, we've seen it differently but why?, and you start to question your own ability to read things and to understand and take knowledge in. But through discussing it you see that we've all got strong and weak points. But you can't have that level of discussion with out people all having the same basic text. And everyone has access to the text a week before, at least a week before. And everyone had the same, underlying knowledge in that we've all got access to the same material and if we use it properly we can all learn from it" (focus group respondent).

The significance of the shared experience for learning was corroborated by all of the outcome-led module tutors, the level 2 outcome-led module tutor explaining:

"I think it's very important. I give them specific references to follow up in study time and exercises to do that relate to the sessions, I also use it extensively for the students to prepare for sessions. I think that it's very important that study time is built in to the process of what we're doing in each session and what we expect of them in their own time. It helps them greatly to grasp what the module is about and provides common ground".

But, as with the other design features which have been cited, the weekly programme was also perceived as serving to fuel an achieving approach to learning by defining what was deemed by the lecturer to be the most important elements of the module and thereby closing down learning which was not directed specifically towards assessment:

"We've only got a couple of lectures after the hand in date of the assignment. So I've actually presumed that those aspects are not to be included in the assignment, and therefore are not as important, and therefore I won't even learn about them" (focus group respondent).
Whilst both the detailed weekly programme and the programme for study time were cited by respondents, the influence of a reading list was commented on by 50% of all focus group interviewees as influencing how learning was perceived. Many respondents suggested that the reading list gave them an idea of what learning was about in their module and a starting point for their study, with one caveat - that the books should be available in the library:

"it suggests which areas are going to be covered and what you need to work on" (CMS, 4),

"it is an essential aid to knowing what learning is" (CMS, 63),

"it gives you the outline of what to learn" (CMS, 35),

"the list influences the starting point for learning: (CMS, 46),

"I think you can get lots of, ere, clues from books off the reading list and you go and pick up a book and that sort of gives you a basic idea, it gives you some sort of clues about what learning is about in your module" (focus group respondent).

Students on the traditional modules commented that acquiring the books was essential to grasping the module and the rush for them was akin to a "smash 'n' grab" débacle; those students failing to get the required material being seriously disadvantaged throughout the module. In contrast the use of the short loan facility by module leaders on the outcome-led modules was referred to widely as providing wider access for all module participants to the key literature which they were guaranteed to find:

"the short loan gives you an indication of the major focuses of the learning. The books are on short loan because lecturers think they're important and therefore everybody should have access to the books to help them to learn and produce written work which reflects those ideas within the books. Whereas the other books which are on normal loan, they're sort of up for grabs"
basically. In x (her other subject) you just get told to go away and read about your subject. So there's say fifty people in a group trying to get information about that subject and if you're not one of the first five to the library you either don't get anything or you get something that's so out dated, that you really don't have a chance, then you come across as being really unprepared, and it's not your fault You know I only come over here (to Walsall) once a week but I know when I come over here I can get all the information I need for two, three four weeks, that gives me confidence and I spend my time learning not worrying or chasing books" (focus group respondent).

All of the lecturers interviewed made use of reading lists and cited them as influencing students' learning, but none of the traditional module tutors made use of short loan facilities. The level one outcome-led module leader suggested:

"the reading list and especially the short loan are significant. It's very important to try and make the reading readily available to everyone, you know. It's very difficult, but we felt they had to have some things that they can all refer to".

For all of the design features which have been discussed so far, the module guide served as the vehicle for dissemination. 44 out of the 63 respondents cited the guide as influencing how they perceived learning in a module (Table 5.8). The main reason for this was because the guide was perceived as providing the opportunity to draw together information on the key elements of a module, as one respondent summarised:

"the module guide structures your learning, it gives me the outline for my learning, it allows me to keep on track, to use time constructively and reminds me of areas I'm weakest on. The guide is my life jacket for study" (CMS, 39).

But in one traditional module where the guide was seen as 'scanty' (CMS, 68) 'open' (CMS, 64) or 'sparse' (CMS, 67) it failed to provide this direction, as one respondent noted:
"I wasn't directed by it, it contained little information, they can direct you but this one didn't (CMS, 44).

But paradoxically the lack of detail in the module guide did serve as an influence, not in shaping participants perception of learning in the way conceived by the lecturer, but by allowing students to shape their own perception or to retain their preconceptions by providing 'carte blanche guidelines' (CMS, 64,67,69), a focus group respondent explained:

"if you are told you are going down this channel that is one set of influences. If it's not laid down or if you are told you can go down whatever channel you like as long as you get to this standard, then that's a totally different set of influences, but it is an influence none-the-less" (focus group respondent).

Whilst the independence promoted by this approach might be said to provide the conditions for a deep approach to learning, this is only for students who come to the module with a qualitative conception of learning at 'presage', students who have the necessary metacognitive skills to undertake the kind of learning activities characterised by this approach. Conversely, the lack of direction in the module may merely serve to allow students with a quantitative conception at 'presage', who are likely to adopt a surface approach to learning (Biggs, 1990b), to retain both their conception and a surface approach held at the beginning of the module. A 'carte blanche' proposition does not challenge students' preconceived ideas about the what or how of learning; it does not seek to move a student holding a quantitative conception forward towards a qualitative conception.

But even where the guidelines given do seek to influence learning by challenging students' preconceived ideas, this is not achieved solely by the existence of a clear framework; both appropriate lecturer action, in following the outline presented, and learning activities, in responding to it, are felt to be requisites. A number of students reported the frustration experienced when lecturers failed to follow the guidelines that had been given:
"a lot of the time you get a module guide, I've got one for x (the student's other subject) at the moment and there's sort of a programme for week one and two and so on and there's a title for each session. But under the title there's a list of things that aren't actually related to the title and we might study one of those. But at the moment we're studying things we should be studying in week eight and we haven't done the things we should have done in week two. Because even though we were supposed to be preparing for them and preparing ourselves the tutor hasn't prepared himself for those particular things. That's his lack of organisation, the fact is we were given a module guide and it has nothing to do with what we've done, so it hasn't really influenced us" (focus group respondent).

The level one outcome-led module leader was particularly expansive about the conditions which were necessary for the module guide to serve to influence students' perceptions of learning:

"I suspect that they, develop their idea of learning from their own reference to the module guide and their response to it. I don't for example say 'it is now time for me to draw your attention to the fact that this is an outcome module' - it's more kind of incidental, it comes up in a conversation because it's occurred to me, it's usually wrapped up in something else that I want to explain which may not be at a time when students are paying attention to me or listening, or bothered about whether it's a learning outcomes module. So I suppose really that it's going to depend on how much they look at the module guide. Because I think some students do frequently look at their module guide, when they, themselves, want to find out something, and orientate. When they're motivated to find something out they'll either ask their tutor or more probably look at the module guide. I think my students are going to look at the module guide when they really want to clarify what it is they're supposed to be doing and learning at any time. Like for example when they're working on assignments. And I think that's because learning is driven by them [the assignments] That's probably more significant than a tutor reminding them that what learning is about and that they're doing
learning outcomes, which I suspect is usually in the first session".

Implicit in this statement are the assumptions that what the tutor expects the students to be learning, the learning outcomes and the demands of the assessment tasks are accordant and that the learner takes appropriate action in response to the design.

All of the features discussed in this section have related directly to the design of modules, but an additional feature which was included in the conceptual mapping survey by 21 of the 63 respondents was the influence of peers in shaping how students perceived learning in their modules. The design of modules is such that the taught sessions include the exploitation of group work to facilitate peer interaction which takes place in the formal module time and on these grounds the influence of peers may be accepted as part of the design model notwithstanding the fact that peer influence will also be exerted informally outside of the official curriculum. This interaction, whether planned or serendipitous serves both to clarify expectations about learning:

"talking to other students gives me a broader picture and a better understanding of what learning is about" (CMS, 16),

"talking to other students is often a way of clarifying what is to be learned. Sometimes students may have different conceptions of what is to be done" (CMS, 23),

"talking with other students can help to point you in the right direction or give a new point of view" (CMS, 7),

"whilst working in a group situation input from other members helps me to focus my learning" (CMS, 69)

and to enrich the learning experience:

"peers and friends help you to evaluate what you have learned, discussion is often the most effective way to learn" (CMS, 22),

"contact with other students is a (potentially) treasury of direct experience" (CMS, 71),

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"it is a process enabling personal growth and development" (CMS, 72).

This analysis of the design features which are perceived as influencing how students perceive learning provided the data for the inclusion of variables in the Likert scale questionnaire (Appendix 13). The principles which underpin the learning outcome-led design model were all reflected in these findings such that all the variables included in the questionnaire are grounded in the experiences of students and their tutors.

5.6.1 Questionnaire Sample
A sample of students taking 3 traditional modules and 3 learning outcome modules with one module at each of the three undergraduate levels in education studies was selected to complete the questionnaires. The sample size for both traditional and outcome-led modules was N=161: 135 women, 26 men and for the learning outcome-led modules alone N=104: 90 women, 14 men. There were more women than men in the sample which reflects the ratio of men to women taking education studies.

The total sample size for both analyses was deemed to be 'middling' bordering on 'meritorious' based on Kaiser's categories (1974) and Kaiser-Meyer-Olkin measures of sampling adequacy of .79965 and .79925 respectively (Kaiser, 1974, p.35), a level of .50 being acceptable according to Kaiser. Whilst the sample size for the outcome modules was smaller than that for all the modules the sample of 104 respondents fulfils Gorsuch's (1983) criterion of an absolute minimum of five subjects per variable and not less than 100 subjects per analysis and meets the criterion of five subjects per emergent factor suggested by Arrindel and Van der Ende (1985).

The sample for the first analysis was heterogeneous including respondents who were studying both learning outcome-led and traditional modules, whilst the sample for the outcome-led modules was, by definition, homogeneous involving only participants who were experiencing this type of curriculum design.
5.6.2 Variables
Seventeen variables were included in the Likert scale questions (see Appendix 13), they are set out with their codes in Table 5.2

The sample of variables included the principle features of both traditional and learning outcome-led design based on the validated modules which fell into each category. In addition the design features which respondents in the focus group in the pilot study had identified as influencing the way in which they saw learning in their modules were included. The variables were incorporated into a Likert scale questionnaire.

Table 5.2: Key to Variables
CLEASTAT There is a clear statement in the module guide of what is expected
READLIST The reading list helps me to decide on what to focus my learning
WEESESY The weekly sessions help me to achieve the learning outcomes
TUTCLEAR The module tutors make it clear right from the start what they expect
USEASCRI I make use of the assessment criteria to decide on what to learn
WEESESN The weekly sessions do NOT help me with the assessment tasks
ASKLECT I need to ask the lecturer in order to find out what is expected of me
USEDESC I make use of the descriptions of the assessed tasks to focus
LOCONF The learning outcomes give me confidence to concentrate on my learning
USEWEPRO I use the weekly programme to plan my reading
SESEUND The seminar sessions help me to understand the outcomes
LECSTRES Lecturers expect students to accept total responsibility for their learning in this module
RELYSTU I rely heavily on other students to guide the focus of my learning in this module
USEDIRE I use the directed reading to prepare for taught sessions
CONFOCLE The content of the taught sessions influences the focus of my learning
GUMAPOUT The module guide helps me to 'map out' what learning is in this module
CONLEARN The close link between the learning outcomes, the sessions and the assessment influence what I learn in this module

5.6.3 Method of determining the number of factors to be retained.
SPSS, applying the Kaiser criterion by default, selected 5 factors with eigenvalues greater than one (Table 5.3) to rotate for the analysis from the sample of traditional and outcome-led modules. 4 factors were selected by the same criterion for the outcome-led modules (Table 5.4). The factors were then rotated to simple structure using Varimax (an orthogonal rotation)
Table 5.3 Eigenvalues For Each Rotated Factor Respondents From Both Traditional and Outcome-led Modules

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<td>2</td>
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<td>4</td>
<td>1.22090</td>
</tr>
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<td>5</td>
<td>1.01726</td>
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Table 5.4 Eigenvalues For Each Rotated Factor Respondents From Outcome-led modules

<table>
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<td>1.39183</td>
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<td>4</td>
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In addition to the Eigenvalue-greater-than-one rule, a Scree test (Cattell, 1966) was used on both analyses. Whilst the analysis from the traditional and outcome-led modules produced 5 factors with eigenvalues greater than one, a Scree test demonstrated that the eigenvalues start to level off between factors 3 and 4 (Figure 5.1) suggesting that only 3 of the 5 rotated factors should be retained.

Figure 5.1 Scree Plot for Traditional and Outcome-led Modules
The Kaiser criterion from the analysis of the outcome-led modules produced 4 factors with Eigenvalues greater than one, a Scree test demonstrated that the eigenvalues start to level off between factors 3 and 4 (Figure 5.2) again suggesting that only 3 of the rotated factors should be retained.

**Figure 5.2 Factor Scree Plot for Outcome-Led modules**

![Factor Scree Plot](image)

**5.6.4 Percentage of variance accounted for by the retained factors**
The percentage of variance accounted for by each of the retained orthogonal rotated factors is given in Table 5.5. In both studies a very strong first factor emerged which accounted for 27.8% of variance in the traditional/outcome-led data and 29.9% in the outcome-led data. The three factors which have been retained accounted for 45.9% of variance in data from respondents studying both types of modules and 49.9% in the variance from the learning outcome-led modules.

**5.6.5 Results**
In all of the retained factors only the items that loaded more than 0.40 on the factor were used to define the factors. The factors were interpreted from the content of the items which loaded on them, the content of the highest loading items being used as the key to the identification of factors.

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Table 5.5 Percentage of Variance Accounted for by the Retained Factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Percentage of variance</th>
<th>Cumulative percentage</th>
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Traditional and Outcome-led modules
The factors for the traditional and outcome-led modules were rotated using Varimax and converged after 11 iterations, the resultant matrix showing the factor loadings for each variable within the 5 rotated factors is shown in Table 5.6.

Interpretation of factors
The first factor was labelled 'clarity of module expectations'; it is unequivocally a construct about providing a clear statement about what learning is about in a module as each variable that loads on to the factor (Table 5.7) indicates. The fact that ASKLECT loaded negatively on the factor is consistent with this label suggesting that students do not need to ask their lecturer for details of what learning is about in a module when clarity is provided through other sources. It is important to note that in exploratory studies items that do not load a factor can provide as much insight as those that do (Kline, 1994). 'Relying on other students to guide the focus of learning' does not load on this factor and thus it can be inferred that when the expected outcomes of a module are clearly stated then students do not rely on lecturers and their peers to focus their learning.

The items in the second factor all relate to the influence of the teaching context on students' perceptions of learning. The two items which loaded less than 0.4 on this factor (Table 5.6) have also been taken into
Table 5.6 Rotated Factor Matrix (Traditional and Outcome-led Modules)

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<tr>
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<th>Factor 3</th>
<th>Factor 4</th>
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<tr>
<td>USEWPRO</td>
<td></td>
<td></td>
<td></td>
<td>.74514</td>
<td></td>
</tr>
<tr>
<td>USEDESC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.72385</td>
</tr>
<tr>
<td>LECSTRES</td>
<td></td>
<td></td>
<td></td>
<td>.70406</td>
<td></td>
</tr>
<tr>
<td>USEASCR</td>
<td></td>
<td></td>
<td>.39941</td>
<td>.47271</td>
<td>-.38982</td>
</tr>
<tr>
<td>RELYSTU</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.72191</td>
</tr>
<tr>
<td>LOCONF</td>
<td></td>
<td></td>
<td></td>
<td>.37726</td>
<td>.43915</td>
</tr>
</tbody>
</table>

considered in labelling, both of these items - 'the module tutors make it clear from the start what is expected' and 'the close link between the outcomes, the sessions and the assessment influence what I learn' - relate to the influence of the teaching context on students' perceptions of learning, which serves to confirm the identification of factor 2. It is not surprising that these two variables load on both Factor 1 and Factor 2; they are both items which refer to providing clarity of expectation specifically through the teaching context, as opposed to the remaining items in Factor 1 which encompass providing clarity through module documentation.

Factor 3 was identified as "learning activities" because both of the variables are concerned with metacognitive strategies which the learner has undertaken as a direct response to the module design. Both Gibbs (1992 b) and O'Neil (1995) acknowledge the influence of such strategies, not in the form of study skills such as note-taking and summarising, but rather in terms of the skills which Gibbs (1992b)
Table 5.7 The Three Factor Solution for the Traditional and Learning Outcome-led Modules

<table>
<thead>
<tr>
<th>Factor 1: Clarity of Module Expectations</th>
<th>Item (précis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation</td>
<td></td>
</tr>
<tr>
<td>.75 (-)</td>
<td>I need to ask the lecturer to find out what is expected</td>
</tr>
<tr>
<td>.65</td>
<td>There is a clear statement of what is expected</td>
</tr>
<tr>
<td>.61</td>
<td>The module tutors make it clear from the start what is expected</td>
</tr>
<tr>
<td>.60</td>
<td>The close link between the outcomes, the sessions and the assessment influence what I learn</td>
</tr>
<tr>
<td>.55</td>
<td>The module guide helps me to 'map out' what learning is</td>
</tr>
<tr>
<td>.53</td>
<td>The reading list helps me to focus my learning</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 2: Teaching Context</th>
<th>Item (précis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation</td>
<td></td>
</tr>
<tr>
<td>.77</td>
<td>The weekly sessions help to achieve the outcomes</td>
</tr>
<tr>
<td>.76</td>
<td>The seminar sessions help me to achieve the outcomes</td>
</tr>
<tr>
<td>.63 (-)</td>
<td>The weekly sessions do not help me with the assessment</td>
</tr>
<tr>
<td>.43</td>
<td>The content of the taught sessions influence my learning</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 3: Learning Activities</th>
<th>Item (précis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation</td>
<td></td>
</tr>
<tr>
<td>.83</td>
<td>I use the directed reading to prepare for taught sessions</td>
</tr>
<tr>
<td>.75</td>
<td>I use the weekly programme to plan my reading</td>
</tr>
</tbody>
</table>

suggests encompass "developing a sense of purpose, an awareness of task demands and flexibility in adapting to different demands" (p. 15). The two variables which load on this factor - using the directed reading to prepare for taught sessions and using the weekly programme to plan reading - both relate specifically to developing a sense of purpose in relation to the module outcomes and to adapting to the demands presented. Two of the three items which load below .40 on this factor - 'the module guide helps me to 'map out' what learning' and 'I make use of the assessment criteria to decide on what to learn' also relate to learner-centred activities which suggests that there can be little doubt about the identification of this factor. It is not surprising that other items within the list of variables relating to 'learning activities' do not load on this factor because the respondents in this sample include students studying both traditional and learning outcome-led modules and the items referring specifically to making use of assessment criteria and tasks are not a feature of the traditionally designed modules.
Learning Outcome-led Modules
The factors which were derived from the respondents studying learning outcome-led modules were rotated using Varimax and converged after 7 iterations, the resultant matrix showing the factor loadings for each variable with the 4 rotated factors (Table 5.8).

Table 5.8 Rotated Factor Matrix (Learning Outcome-led Modules)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEESESY</td>
<td>.85707</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TUTCLEAR</td>
<td>.73756</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEESESN</td>
<td>-.60202</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SESESUND</td>
<td>.60052</td>
<td>.40552</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLEASTAT</td>
<td>.53246</td>
<td>-.53002</td>
<td>.42171</td>
<td></td>
</tr>
<tr>
<td>CONLEARN</td>
<td>.48121</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USEWEPRO</td>
<td></td>
<td>.75150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USEDIRRE</td>
<td></td>
<td>.73957</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GUMAPOUT</td>
<td>.61530</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOCONF</td>
<td>.58035</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONFOCLE</td>
<td>.56835</td>
<td>.45363</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USEASCR1</td>
<td>.53149</td>
<td>-.37028</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USEDESC</td>
<td>.41114</td>
<td>.47176</td>
<td></td>
<td></td>
</tr>
<tr>
<td>READLIST</td>
<td>.33041</td>
<td>.37760</td>
<td>-.33997</td>
<td>.35180</td>
</tr>
<tr>
<td>RELYSTU</td>
<td></td>
<td></td>
<td>.81774</td>
<td></td>
</tr>
<tr>
<td>ASKLECT</td>
<td></td>
<td></td>
<td>.57610</td>
<td></td>
</tr>
<tr>
<td>LECSTRES</td>
<td></td>
<td></td>
<td></td>
<td>.81546</td>
</tr>
</tbody>
</table>

Interpretation of factors
Factor 1 is a construct related to the clarity of the expected outcomes and to the influence on the teaching context in helping the students to achieve these outcomes. It is labelled 'congruence between the outcomes, taught sessions and the assessment régime' (abbreviated to 'congruence') since the variables are concerned with the connectedness between the taught sessions and the outcomes and assessment (Table 5.9). The negative loading of 'the weekly sessions do not help me with the assessment' is wholly consistent with this factor identification, suggesting that the weekly sessions do contribute towards clarifying, and facilitating the achievement of, the outcomes.
Table 5.9 The Three Factor Solution for the Learning Outcome-led Modules

<table>
<thead>
<tr>
<th>Factor 1: Correlation</th>
<th>Congruence</th>
<th>Item (précis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.86</td>
<td>The weekly sessions help to achieve the outcomes</td>
<td></td>
</tr>
<tr>
<td>.74</td>
<td>The module tutors make it clear from the start what is expected</td>
<td></td>
</tr>
<tr>
<td>.60 (-)</td>
<td>The weekly sessions do not help me with the assessment</td>
<td></td>
</tr>
<tr>
<td>.60</td>
<td>The seminar sessions help me to achieve the outcomes</td>
<td></td>
</tr>
<tr>
<td>.53</td>
<td>There is a clear statement in the module guide of what is expected</td>
<td></td>
</tr>
<tr>
<td>.48</td>
<td>The close link between the outcomes, the sessions and the assessment influence what I learn</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 2: Correlation</th>
<th>Learning Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>.75</td>
<td>I use the weekly programme to plan my reading</td>
</tr>
<tr>
<td>.74</td>
<td>I use the directed time to plan for taught sessions</td>
</tr>
<tr>
<td>.62</td>
<td>The module guide helps me to 'map out' what learning is in this module</td>
</tr>
<tr>
<td>.58</td>
<td>The outcomes give confidence to concentrate on my personal interests</td>
</tr>
<tr>
<td>.57</td>
<td>The content of the taught sessions influence my learning</td>
</tr>
<tr>
<td>.53</td>
<td>I make use of the assessment criteria to decide on what to learn</td>
</tr>
<tr>
<td>.47</td>
<td>I make use of the descriptions of the assessed tasks to focus my learning</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 3: Correlation</th>
<th>Reliance on Lecturer and Peers</th>
</tr>
</thead>
<tbody>
<tr>
<td>.81</td>
<td>I rely heavily on other students to guide the focus of my learning</td>
</tr>
<tr>
<td>.57</td>
<td>I need to ask the lecturer in order to find out what is expected of me</td>
</tr>
<tr>
<td>.53 (-)</td>
<td>There is a clear statement in the module guide of what is expected</td>
</tr>
</tbody>
</table>

Factor 2 is unequivocally about metacognitive strategies (Nisbet and Shucksmith, 1984; Robinson, 1983), and accordingly is labelled "learning activities". Whilst 'the reading list helps me to decide on what to focus my learning' loads on this factor, the loading is >0.4. More important, this item loads on all four factors and therefore it is excluded from the analysis.

Factor 3 establishes very clearly the connection between the need to ask lecturers and other students for guidance about what learning is about in a module when the module guide does not make this clear - the item 'there is a clear statement on the module guide of what is expected' loading negatively on Factor 3. The factor is labelled 'reliance' to-
embody the notion that when the module literature does not elucidate what learning is about in a module then students have to resort to relying on their peers and their tutors to inform them.

5.6.6 Discussion of the factor analysis

The factor solutions for (a) the respondents from all modules and (b) the respondents from the learning outcome-led modules resulted in 6 factors being identified.

The first factors from both of the analyses are constructs which relate to clarity. Factor 1 in the analysis for the traditional and outcome-led modules firmly establishes that both the module tutor and the module documentation provide a clear statement about what learning is in a module. The salience of clarity of purpose is reflected in the early work of Mager and Clark (1962) who suggested that students will learn more, and learn more quickly, if they know where they are going. Factor 1 for the outcome modules - 'congruence' - incorporates the dimension of the connection between the teaching context the module tutor's expectations, assessment and the statement about what learning is in the module documentation (Table 5.9) in both providing a clear statement of what learning is about and in helping students to achieve the module outcomes. This is entirely consistent with the learning outcome-led model which seeks to design learning experiences in which the principal feature is the congruence between the lecturer's perception of what learning is about and the essence of learning experience which is fostered in the taught sessions. The notion of congruence is equally integral to the relational view of learning which Ramsden (1987, p. 275) means “conceptualising the teaching and learning process holistically”, rather than focusing on discrete elements in order to unify the how - the process of learning and the what - the outcomes of learning and to maximise the possibility of changing learners' perceptions. More recently Ramsden (1992) has suggested that assessment is influential in shaping a student's perception of learning. Whilst assessment is included in this construct, it is linked directly in one item to the weekly sessions and in the other to the outcomes and the weekly session (Table 5.16) suggesting that assessment shapes students' perceptions of learning when it is in concert with the stated outcomes and the weekly sessions.
The label "learning activities" has been used to describe the construct implicit in Factor 3 in the analysis for respondents from all modules (see Table 5.7) and for Factor 2 in the analysis from the learning outcome-led modules (see Table 5.9). Close examination of these two factors reveals that the two items 'I use the directed reading to prepare for taught sessions' and 'I use the weekly programme to plan my reading' which make up Factor 3 for the analysis (a) are also included in Factor 2 for analysis (b). The factor solution for the outcome-led modules (see Table 5.9) establishes the connections between learning activities in directed time and the learning experience in taught sessions. This construct establishes a further link between the assessment criteria and tasks, the content of the module and the learning which takes place in directed time. This is wholly consistent with the outcome-led model which seeks to promote a holistic and integrated experience in which there is consonance between what is learned - in directed time through independent student action and in taught sessions - and what is assessed.

It is not surprising that additional items which are not included in analysis (a) (respondents for all modules) do load on 'learning activities' in analysis (b) (respondents from the outcome-led modules), for these items are features of Allan's outcome-led model (2.3.2) which has formed the basis for the design of the modules which these respondents have been taking. These items comprising "learning activities" reflect the learning skills suggested by Gibbs (1992b) and relate to developing a sense of purpose, awareness of task demands and an ability to be flexible in response to such demands. In contrast, Factor 2 - 'teaching context'- derived from the analysis of all the modules (Table 5.7) verifies the internal connection between features of the teaching context in achieving the outcomes, drawing together the influence of the weekly sessions, the seminar sessions and the content of the taught sessions. But this factor does not link the taught sessions with either the directed time or the assessment regimes which is not unexpected since the design of traditional modules, unlike the learning outcome-led modules, does not seek to conjoin the taught sessions, directed time and assessment tasks and criteria. The item 'the content of the taught sessions influence my learning' does, however correlate with both the construct 'teaching context' for all modules and "learning activities" for the outcome-led
modules. Ostensibly this appears to be somewhat anomalous, but in the outcome-led modules there is more of an emphasis on the use of directed time to achieve the outcomes of the module and therefore it seems reasonable that this item should have correlated with the other variables which more directly and more specifically denote 'learning activities'. Both Ramsden (1992) and Biggs (1990 b) suggest that the teaching context is influential in shaping a student's perception of the demands of learning in context, whereas Prosser (1995) links what might be termed the 'teaching context' - course and departmental learning - directly with what he terms the 'learning context'. The connectedness between the taught sessions and learner action implicit in Prosser's model is explicit in the constructs 'congruence' and 'learning activities' which emerged from the analysis of the outcome-led modules.

5.6.7 Validity of the factors
Interviews with respondents whose responses to the Likert questionnaire loaded high and low on the factors (see 3.7.2) were undertaken to establish the validity of the labels which were ascribed to the constructs emerging from the factor analysis. A detailed discussion of these findings which confirm the validity of the factor labels can be found in Appendix 19.
5.7 To what extent do the design features identified in the constructs influence students' perceptions of learning?
Data relating to the learning strategies undertaken by those students in both the traditional and learning outcome-led modules who held a different conception of learning from their lecturer provide the basis for this analysis. Whilst on the one hand it is posited in this thesis that the design features identified through the factor analysis do influence students' conceptions of learning, there is not 100% consonance between students' and lecturers' conceptions of learning even in the outcome-led modules which include the features which have been shown to influence how students perceive learning in context. The existence of students who do not share their lecturer's conception challenges the extent of the influence of these features and specifically of the outcome-led model. This apparent anomaly is explored further in this section which includes a brief summary of the level of congruence between students' and lecturers' conceptions of learning in order to identify the extent of dissonance in each module. Responses from students taking traditional modules as well as the in-depth studies of 4 respondents taking the level 1 learning outcome module are analysed.

5.7.1 To what extent do the design features identified in the constructs influence students' perceptions of learning on the traditional modules?
Level 1
Detailed discussion of the level 1 lecturer's conception of learning for her students on this module in 5.3.2 showed that this was consistent with category C which is a quantitative conception emphasising the application of received knowledge to the student's personal life-world. Only 3 students (14% of module respondents) shared this conception with their lecturer (Table 4.7). The main cluster of responses centred on conception B which accounted for 13 students (59% of respondents on the module) who shared the same erroneous perception about learning in this module, but there was also a smaller cluster of 6 students (27% of module respondents) who were deemed to have a more qualitative perception of learning than their module tutor.

Responses from students and from the lecturer suggest that there are a number of explanations for the misinterpretation of learning in this module. When asked to compare this traditional module with a learning
outcome module a number of students commented on the comparative lack of clarity of module expectations in this traditional module:

"I find the outcomes we have to meet [in the learning outcome module] very useful. It gives me a structure and guide for my assignment and my learning so I know what I should and should not include. Whereas this module hasn't got them and I'm very wary of it and of writing an essay after 7 weeks on something that I haven't got knowledge on. I need an idea of what is expected from me" (R. 141).

**Figure 5.3 Level 1 Traditional Module Incidence of Conceptions**

<table>
<thead>
<tr>
<th>Conception</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conception B</td>
<td>59</td>
</tr>
<tr>
<td>Conception C</td>
<td>14</td>
</tr>
<tr>
<td>Conception D</td>
<td>27</td>
</tr>
</tbody>
</table>

Number of respondents = 22  (lecturer held conception C)

and another student who comments:

"The learning outcome modules provide a useful guideline to learning and to background research. This gives the student a basis on which to return for revision or to go over a concept which may have been misunderstood" (R. 156).

There are numerous references to the desire for 'guidelines', direction and expectation which the learner uses to focus his/her learning:

"the learning outcomes in x [outcome-led module] are useful in that we are able to understand and define
certain things by the end of the module. I think they are more defined and precise compared to the rather 'general' outcomes in this module" (R.150).

When asked about the extent to which the module leader thought she had made her expectations clear to her students she too had reservations, particularly about the extent to which students had grasped the notion that they need to apply the content of the module to their own experience:

"Yes when I think of it I hope they've inferred it. I think they should be using their own experience, I referred to that in quite a lot of the sessions, and we've actually had tasks based around that, so that has been brought out much more so probably that is much more obvious, the other things are probably much more hidden in a sense that you hope that those are the kinds of things that they will develop over time, will learn not just from this module, but from other modules altogether".

3 out of the 22 students on the module did infer correctly how the module leader perceived learning in this level 1 module, therefore sharing her perception, but the remaining 19 either misinterpreted what was expected or were not sufficiently challenged to reconceptualise their preconceived beliefs about learning in the module based on previous learning experiences. This is reflected in a statement by one respondent in which the how of learning in general, and not specifically learning in this module, is referred to, suggesting that the respondent applies a pre-existing conception to each new learning experiences:

"I see learning as observing, experiencing and taking part either in a structured or unstructured manner. By structured I mean formal lessons, lectures and unstructured through friends, family etc." (R. 141).

This is also implicit in the following statement from another participant who refers to her previous experience at school which she wished to replicate in higher education:
"although it sounds like school days, the concept of a test every week is such an efficient way of forcing people to learn work. The teacher can then see where there are problem areas and work within the group or with the individual" (R.144).

The student, who was categorised in conception B for this module went on to say that:

"I think learning in this module is about taking in the points that x [the lecturer] makes and elaborating on them...I find it very demanding that in order to grasp the knowledge we have to read so much. This is very hard going and sometimes get to be a bit much. The fact that an entire semester's work can be wasted due to poor marks in an assignment I find daunting."

She expresses a preference for a log-book:

"Because of the need to do an assignment every week you are forced to learn the work for that particular week. In contrast in this module it is so easy to forget what was learned in a previous week".

This student sees the how, the process of learning as being teacher/lecturer oriented and controlled and therefore she prefers to cling to the security of weekly feedback to reassure herself that she is fulfilling these expectations. Yet in this module she cannot really grasp what these expectations are, so her beliefs about learning acquired through her previous experience still heavily influence how she sees learning. Hence for this student - and for the majority on this module - 'presage' factors (Biggs, 1990 b p.13) prevail and her conception of learning remains as it was on entry to higher education. Whilst this does not refute Laurillard's hypothesis (1979) that students' perceptions and therefore approaches to learning are context-dependent, it does suggest that changing students' perceptions presents a real challenge to curriculum designer and lecturers.

Consistent with the underpinning theory students' approach to learning was found to be contingent upon their conception of learning (Schmeck, 1988; Marton, 1988). The learning activities, the how of learning, undertaken by the students in this module who held a more
quantitative conception than their lecturer focused primarily on the
teaching context and on activities initiated by the lecturer which related
to the acquisition of knowledge, rather than on activities which involved
taking responsibility for their own learning, activities which emphasise
personal engagement with the learning experience. This reliance on
lecturer input is described by a number of respondents on the module,
all having a perception of learning in the B category:

"learning to me means being provided with
information which is new to me and going over it in my
mind and being able to exercise what I have been taught
in my assignment" (R. 142),

"my learning style is relying on someone to set it up for
me so that I can achieve my goal better. If I don't have
a guide to do my work I spend most of my time
relaxing". (R. 138)

"I feel that learning in this module is about being told,
and discussing various aspects of the subject, so that I
will be in a position and frame of mind to know about
the subject in my own words" (R. 147).

Entwistle's (1988) work demonstrated that a deep/holistic approach to
learning resulted in "an active process of learning" whilst a
surface/atomistic approach led to "little or no personal engagement"
(p.24) on the part of the learner. These findings suggest further that a
distinct forms of learning activities which may be named 'teacher
oriented' action can be directly related to a students' quantitative
conception of learning as well as to a surface/atomistic approach.

It might be argued that the design of this traditional module has not
given sufficiently clear messages to students about what learning is
intended to be, but this is a conscious decision by the module leader who
when asked about the direction given stated:

"I think it is open enough to allow other things to come
in, the more you move towards outcomes the more
tight the control is, I don't think that quite happens, I
think you want to allow some flexibility, you don't want
to dot every 'i' and cross every 't' kind of thing so that
you could not bring in things, whereas I guess if you
really tie it up very closely then the students expect that is what you will cover whereas when it is a bit freer, you can still cover that topic but give it a slightly different focus whereas if you said it is going to be based on this reading or that reading then in a sense you have to do it, I think it may constrain you, you can only cover what you have said and sometimes you like to follow up what has come up the week before in more detail that when you were writing the module”.

The module also differs substantially from a learning outcome-led module in terms of the lack of direction which is given to the *how* of learning through student-centred learning activity, such that the majority of participants rely on the teaching context as the focal point of their approach to learning. Reading lists are included and students are encouraged to undertake their own reading, but unlike in learning outcome-led modules, there are no other planned strategies which foster and develop metacognitive skills and knowledge and in consequence no real attempt to challenge preconceived ideas about learning. As the module tutor suggests there is just an aspiration that her expectations will be inferred.

*Level 2*

An analysis of the module team’s expectations about learning in the level 2 traditional module discussed in 5.3.4 revealed that there was consensus about the team’s perception which was classified as conception E (Table 4.6). Figure 5.4 shows that only 1 student held a conception of learning consistent with that of the module tutors. As in the level 1 traditional module there is a cluster of responses around conception B into which responses from 9 students (45% of the module participants) were allocated. Two smaller clusters each of 5 students (25% of respondents) can be seen around conceptions C and D. There is a greater spread of conceptions amongst students with respect to what learning is about in the level 2 module than in any of the other 5 modules analysed (Table 5.10), illustrated by a standard deviation of .968 of spread of the conceptions of learning for this module. This was corroborated by many of the students on the module whose comments included:
"This module seems more open in what we are supposed to learn and be assessed on. There are no specific things we are supposed to learn. I feel that learning is what we get out of it and what we put into it. It is perhaps a matter of interest of the student" (R. 112),

"Learning is not structured or defined in this module" (R. 113),

"In this module things seem a little willy-nilly or undirected in comparison to outcome modules" (focus group respondent),

**Figure 5.4 Level 2 Traditional Module**

*Incidence of Conceptions*

![Bar chart showing incidence of conceptions](chart)

**Table 5.10: The Standard Deviation of Students' Conceptions of Learning**

<table>
<thead>
<tr>
<th>Module</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1 - Traditional</td>
<td>.894</td>
</tr>
<tr>
<td>Level 2 - Traditional</td>
<td>.968</td>
</tr>
<tr>
<td>Level 3 - Traditional</td>
<td>.488</td>
</tr>
<tr>
<td>Level 1 - Outcome</td>
<td>.944</td>
</tr>
<tr>
<td>Level 2 - Outcome</td>
<td>.405</td>
</tr>
<tr>
<td>Level 3 - Outcome</td>
<td>.865</td>
</tr>
</tbody>
</table>
"I don't think there are objectives not as such. Er in fact I don't think they are even laid out in he module guide - Carte Blanche objectives. You can do this you can do that, but they haven't ever laid down in black and white what we need to do, what specific things they expect" (focus group respondent).

"I think it has been left open on purpose so we can do what we want really within reason. That's the objective of it" (focus group respondent).

The module team did not set out to give a set of prescriptive objectives and when asked about this, the module leader replied:

"I've got them here, but I always forget what I'm expecting"

This is not to suggest that the module team had no expectations in mind about either the how or what of learning, but rather that their expectations were not the driving force behind the module. Students were given the choice to concentrate on what they were interested in and then consult the module team for support. This was freely acknowledged by the students, but in itself led to different interpretations about learning in the module. One student in the focus groups explained how he had come to terms with what learning was about in the module:

"we went along [to the seminar] and just sat down with one of them and picked their minds. So in a way we found a little bit about the learning outcomes and assessment criteria from talking to them about what they needed and also found out maybe how we could best meet their requirements for what they were looking for. So that's a very open framework, and that sort of, I think, especially influences any sort of judgments on learning in this module".

This led to a discussion amongst students who felt that some participants had been advantaged by these seminar sessions which others had avoided:

"no, I see what you're getting at. You're saying if someone didn't go and take advantage of that it is because maybe they're a bit nervous about it, or maybe
they felt unsure of themselves because it is a type of learning, they weren’t familiar with it wasn’t the type of learning they’d been brought up with, and they maybe would have rather sat down and be told by a lecturer what they could do, what was expected of them. So you’re right, it’s feasible if some of the people didn’t go they might be unsure of it [learning]."

Such comments led to a general feeling of uncertainty about what learning was in the module:

"I mean for example, the fact you just popped up and had a chat and learn something of vital importance from that conversation makes my ears prick up and say ‘what was that?’ ‘do I need to know?’ ‘And because things aren’t written down it makes me that bit more unsure when people start saying we’re supposed to do this, I heard x (the module leader) say that. And, you know, all these worries start flying round in your head”

and to some students openly expressing their concerns:

"I personally find it very confusing really .... the way it’s set out .... I really haven’t got any direction. I’m finding I’m a bit lost. I don’t know why I’ve got certain aspects to get to know about. But, I still don’t know where to pin-point my learning I just don’t know where it is. I haven’t really started and I should have done by now. I feel, I prefer more structured sort of modules”.

These data corroborate those from the conceptual map survey and support the hypothesis stated in 5.6.1 that the clarity of direction in learning provided by the outcome-led model reduces students’ anxiety about what learning is in a given module and that this awareness influences their motivation and potential to affect the outcomes. The lack of clarity around expectations and the fact that the onus was put on the student to seek out and interpret what learning was about in the module led to the range of conceptions apparent in the module (see Figure 5.4). The high incidence of conception B can be further explained by the module design. Because of the breadth of choice offered in this level 2 traditional module students’ preconceived beliefs about learning were not challenged, but rather were reinforced as is
illustrated by the extract from this student whose response in the module was classified as conception B:

"learning for me is gaining knowledge of subjects which are new to me. In this module learning is related very much to specific personal interest and assessment. Other than very broad and basic knowledge, my only learning has been as a result of study for the assessment" (R. 113),

and another student with conception B who suggests:

"The learning I have undertaken in this module has been largely related to the assignments which I have completed. A lot of other information has been given, but I have only really concentrated on what I need to know" (R. 115).

The design of the module appears to have unintentionally closed down learning as one focus group participant explains:

"if you're going to concentrate on one topic for your seminar paper and you are then as we've been told, developing that theme for your written assignment, I can see that you could spend all your time working in one particular part of the subject, and largely ignoring the rest because "it's-not what I'm doing". It could end up very narrowly focused".

The qualitative conception of learning shared by the module team thus eluded 14 out of the 20 participants on the module. But unlike the level 1 traditional module where the emphasis in the design was on the teaching context and teacher-oriented action at the expense of fostering appropriate learning skills and metacognitive strategies, this level 2 module was designed to put the onus of responsibility for both the what and how of learning on the learner. The module leader explains:

"what this module gives them, rightly or wrongly, we give them the responsibility to manage their own learning".
But this is not to the point of abrogation of responsibility as a member of the module team explains:

"we talk to them, to guide them, to help them to reassure them that they are, you know, on the right lines, or may be that they are not and they need a bit of extra work here".

Herein lies a fundamental paradox for students will adopt an approach to learning which is consistent with their perception of what learning is in a given context, a point which has been extensively shown through research (Entwistle and Ramsden, 1983, Watkins, 1983, Marton and Saljö, 1976, 1984, Van Rossum and Schenk, 1984, Biggs, 1987a, Whelan, 1988, Prosser, 1995). Those participants who bring a quantitative conception of learning to the module, whose conception of learning is not modified by the module experience thus continue to adopt strategies which compound their quantitative conception. Taking responsibility for their own learning for many students involved some form of learner activity, but unsophisticated learner activity which was oriented towards the teacher-led experience provided by the module which, consistent with their unchallenged quantitative conception of learning, was interpreted by them as about the acquisition of knowledge. One respondent with a quantitative conception explains:

"to go about learning in this module, I feel that it is very much up to the individual to find things out for themselves. I have learned a lot about the issues and I have done most of it myself i.e....... having the principle given in lectures and then going away and finding out about it in more detail. I know that I have learned something in this module because I didn't know very much at all about X (the subject of the module), I feel that I do know now about most of the theory involved" (R. 116).

A more eloquent student, again with a quantitative conception acknowledges that there was more to the module than she really managed to take on board:

"learning in this module I feel was trying to offer students a balanced understanding of many different areas. However many students, including myself
confined the learning process by concentrating solely on what they were going to cover for their seminar paper and essay. Therefore other issues were disregarded in favour of the student’s own interests. I feel that I have learned a lot especially in my chosen area but I do not feel confident about X as a whole. In order to complete this module I went about my learning technique in a self-taught manner. I attended lectures in order to gain the basics but I then researched the issue for myself” (R. 134).

The analysis of this traditional module has shown that decreeing that students will take responsibility for their own learning does not necessarily imply that students will take appropriate learning action or indeed that by emphasising student action that this will necessarily bring about the approach anticipated by the tutor and consequently the desired outcomes. But whilst it might be argued that undertaking independent ‘learning activities’ is associated with a qualitative conception of learning, such activities per se do not constitute a sufficient condition for the adoption of a qualitative conception: learner action must be appropriate action and this means that it must involve more than the acquisition of facts and the recall of ideas. As Morgan (1993) point out the way students interpret a situation is contingent upon their conception of learning; those students holding an unchallenged quantitative conception will therefore infer that learning activities involve the acquisition of knowledge, and the action they undertake will be consistent with this perception. This suggests that in order to change students’ conceptions of learning the design of the learning experience of a module needs to inform the nature of the learner action which students should undertake. The design must therefore challenge students’ preconceived notions about the how of learning as much as it does the what.

**Level 3**

Detailed discussion with the module leader of the level 3 traditional module (5.3.3) resulted in his expectations of learning in the module to be categorised as conception D. None of the students on this module shared their lecturer’s perception of what learning was about (Figure 5.5) but there were two clusters of responses, one around conception C
to which 10 students (66.7% of responses for the module) were assigned and another around conception B which accounted for the perceptions of 5 students (33.3% of responses for the module).

The spread of conceptions in this module was low relative to the other five modules analysed, the standard deviation being 0.488 (Table 5.10), suggesting that participants shared the same perceptions of what learning was about on this module even though this did not concur with that of the tutor. An interview with the module tutor revealed that he felt that the students on his module had not really grasped what learning was about:

"I suspect that there are some students who never, certainly during the experience of the module, are never fully aware of what it is like really. What it is all about and what it is all for, or why they did certain things or how things fit. They don't have a coherent picture of the whole thing, you know for them it was a series of episodes".

**Figure 5.5 Level 3 Traditional Module**

**Incidence of Conceptions**

Number of respondents = 15  (lecturer held a conception D)

The tutor explained this mismatch between his own and his students' perceptions on the design of the assessment tasks within the module:

"I think one of the reasons they find it difficult to grasp it [what the module is really about] is because they are very preoccupied with the other parts of the
assessment that they have to do and it kind of over
shadows, in a sense the academic objectives".

He went on to elaborate:

"different perspectives and skills I think, are
over shadowed by the fact that they have to plan and
prepare this training event I think that's such a difficult
task, logistically it's difficult, and I think it generates a
lot of anxiety, and I think that they put so much energy
in to that, that most of them don't pay significant
attention to these kind of academic objectives,
[criticising, synthesising engaging in debates] to setting
it more academically in a context".

The focus group respondents also commented at length on this
assignment over which they displayed the anxiety hinted at by their
lecturer. But the real cause of their disquiet focused on the lack of
direction regarding the assessment as this extract illustrates:

"We all have to do a video, actually of a training
session, but we are not actually given guidance about
how to do that really, we've just got to do it" (focus
group respondent).

"Yes we could have done with a lot more guidance
really at the start of it" (focus group respondent).

"At the start of what?" (author)

'The first assignment, a bit more guidance, a bit more
clarity because a lot was discussed after we'd received it
back, but I think it would have been a lot more useful at
the start of the module, before we actually did the
assignment" (focus group respondent).

Another respondent referred to learning in the module as being 'a bit
cloudy', and explained:

"I had to go away and understand exactly what was
required of me, do you know what I mean? And then
apply what was taught in the lectures to my study
and to the assignment".

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When asked whether she meant that she did not know what was required she replied:

'It was just understanding it [learning in the module] really. As X said after we got the first assignment back he went through it and it was a bit clearer. I think he should have done it before hand'.

Lack of clarity about what constituted learning in the module was cited generally by respondents, particularly when they were asked to compare this module with any learning outcome module they had studied. One respondent confirmed that on a learning outcome-led module she had gleaned information regarding both the what and the how of learning:

"I find learning outcomes very helpful - they give me a direction and I know exactly what areas need in-depth study. I also find it helpful to know what the lecturer expects me to do and to learn" (R. 127).

In contrast the same respondent shared her experience of the level 3 traditional module in the focus group:

"I didn't know where I was going I just tended to waffle, and I learnt what I think should be in there necessarily, but it might not be what the lecturer wanted.......I suppose it's [learning outcomes] another security blanket really. It's more structured you've got something to sort of base things on, you know what you are supposed to be learning. Whereas in this module it was a bit vague which direction you needed to go in".

This respondent, whose conception of learning for the module was conception C, clearly indicates that she was forced to rely on her own perceptions of what learning was about "I learnt what I think should be in there necessarily". Her insight was not informed by her experience on the module, but it stemmed from her existing beliefs about learning, what Biggs (1992b) refers to as ideas held at 'presage', Ramsden (1988) as 'student experience' and Prosser (1995) as 'students' prior orientations, perceptions and experience'. She had no reason to modify these beliefs; they were not called into question by her experiences on the module. This reliance on previously held conceptions
in situations where a different conception of learning is not presented is consistent with the findings for levels 1 and 2 of the traditional modules. It also calls into question Morgan’s (1993, p. 58) assertion that "students’ understanding of learning itself develops overtime". Indeed data from this research suggests that students’ perceptions of learning are deep-rooted and resilient and change only when preconceived ideas are openly challenged.

One feature of the module which informed, although not necessarily challenged students’ perceptions about learning in the level 3 module was the word ‘training’ which was in the title. ‘Training’ appeared in eleven out of the fifteen descriptions of what learning was perceived to be in the module. One focus group respondent explained what the word training connotes for him:

"the word training just conjured up images of actually doing it, rather than learning about it. Training sort of conjures up the idea of practice, whereas, education conjures up the idea of something more academic".

This is consistent with the module tutor’s view that the academic dimension was overlooked because of the inordinate concentration on the training aspect of the module.

The total mismatch between the tutor and participants on this level 3 traditional module thus derives from the lack of clarity about the module and the imperfect transmission of the expectations about learning which were held by the module leader. Students either made inappropriate inferences from incomplete data or, unable to grasp what was required, adopted or retained a quantitative conception of learning notwithstanding the fact that this is a level 3 final honours year module. This is consistent with Säljö’s (1979) hypothesis that when outcomes are not clear then students will adopt a surface approach to learning.

5.7.2 What evidence is there that the design features identified in the constructs influence students’ perceptions of learning on the learning outcome-led modules?

Level 2
The highest level of congruence between lecturers and students’ conception of learning was found on the level 2 learning outcome-led module in which 16 students (84.2% of respondents) shared conception
C with their lecturer (Table 4.7). The spread of conceptions was the narrowest compared with the other five modules analysed, the standard deviation being .405 (Table 5.10). Unlike the level 3 traditional module, the responses for the learning outcome-led module are not only less dispersed across the conceptions but are also more clustered around the conception of learning which corresponds to that of the tutor (Figure 5.6).

One respondent held a more qualitative perception of learning than the module tutor expected from participants, and only two students held a less complex conception. Further investigation revealed that these three respondents were aware from the beginning of the module that they were taking an outcome-led module. Their erroneous conception cannot therefore be attributed to lack of information about the module or ignorance of its design.

**Figure 5.6 Level 2 Outcome-led Module**

**Incidence of Conceptions**

![Chart showing incidence of conceptions](chart)

- Respondent number = 19 (lecturer held a conception C)

The reasons why two out of these three respondents held an inappropriate conception will now be discussed. Whilst respondent 066 showed agreement with most of the items implicit in the construct 'congruence' (see 5.6.6), she was uncertain as to whether or not the module tutor made it clear from the start what was expected of her (Table 5.11), but in spite of this uncertainty she did not ask the tutor for advice neither did she consult other students to guide the focus of
her learning. She felt very strongly that lecturers expect students to take responsibility for their own learning, but she appears to have interpreted this as acting autonomously and apparently without specific direction relating to the module outcomes and content. Thus she did not

Table 5.11: Student Responses to Learning Outcome Module Design Features in the Level 2 Module.

<table>
<thead>
<tr>
<th>Congruence</th>
<th>066</th>
<th>071</th>
</tr>
</thead>
<tbody>
<tr>
<td>The weekly sessions help me to achieve the outcomes</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>The module tutors make it clear from the start what is expected</td>
<td>?</td>
<td>√</td>
</tr>
<tr>
<td>The seminar sessions help me to understand the outcomes of the module</td>
<td>√</td>
<td>?</td>
</tr>
<tr>
<td>There is a clear statement of what is expected</td>
<td>√</td>
<td>?</td>
</tr>
<tr>
<td>The close link between the outcomes, the sessions and the assessment influence what I learn in this module</td>
<td>√</td>
<td>?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning Activities</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I use the weekly programme to plan my reading</td>
<td>x</td>
<td>√</td>
</tr>
<tr>
<td>I use the directed reading to prepare for taught sessions</td>
<td>x</td>
<td>√</td>
</tr>
<tr>
<td>The module guide helps me to map out what learning is about in this module</td>
<td>?</td>
<td>√</td>
</tr>
<tr>
<td>The outcomes give me confidence to concentrate on my personal interests</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>The content of the taught sessions influences the focus of my learning</td>
<td>√</td>
<td>?</td>
</tr>
<tr>
<td>I make use of the assessment criteria to decide on what to learn</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>I make use of the descriptions of the assessed tasks to focus my learning</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>The reading list helps me to focus my learning</td>
<td>√</td>
<td>?</td>
</tr>
</tbody>
</table>

use the weekly programme to plan her work, neither did she make use of the directed reading to prepare for taught sessions, although she did make use of the reading list to focus her learning. The extent to which she used the assessment criteria to inform her understanding of the module is equivocal; she was uncertain as to whether she used the criteria to decide on what to learn and whether she used the descriptions of assessed tasks to direct her learning. The focus of this respondent's activity is on the teaching sessions, on lecturer directed activities that is the content of the taught sessions rather than on her own directed learning relating to these activities and to the module outcomes and assessment. She admits to spending less than half of her directed time on achieving the outcomes of the module but fails to indicate what (if
anything) she does spend the time on. There is little evidence of independent learning activity in response to the module design and a high degree of reliance on the teaching context in spite of her assertion that the lecturer expects students to take responsibility for their own learning. This respondent has retained a perception of learning which emphasises gathering factual information for assessment purposes; she has failed to appreciate the need to apply this knowledge beyond 'knowing more about research than at the start of the module'. It has already been suggested that providing a clear statement of the outcomes of a module is a necessary but not sufficient condition for aligning student and lecturer's perceptions of learning (which most probably involves changing students' perceptions); these data support this hypothesis. In this module there was a clear statement about what learning was about particularly in terms of the what of learning, but this individual student misinterpreted it and failed to respond to the direction given in respect to the how, the process of learning. As with the level 2 traditional module the action which this respondent undertook was teacher oriented and directly related to the student's quantitative conception of learning. This substantiates the hypothesis already made that a relationship exists between a student's quantitative conception of learning and his/her propensity to undertake teacher-oriented activities.

The second respondent (R. 071) who held a conception B for this level 2 module was less certain than respondent 066 that there was a clear statement in the module guide of what is expected (see Table 5.11), but she felt that the module tutor did make it clear from the start what learning was about and she sought to confirm this with him. However unlike respondent 066 she was uncertain as to whether the link between the outcomes, the sessions and the assessment influenced what she learned. Like respondent 066 this student used the reading list to focus her learning but unlike respondent 066, she also made use of the weekly programme to plan her work and the directed reading to prepare for the taught sessions. She relied less than respondent 066 on the content of the taught sessions to influence her learning, and like respondent 066 she found the seminars helped her to understand the outcomes of the module. Respondent 071 was equally uncertain about the extent to which she made use of the assessment criteria and tasks to
inform her learning and she also indicted that she spent less than half her directed time on achieving the outcomes of the module, again without stating what she did do with this time. Whilst there is more evidence of appropriate personal engagement in learning activities in response to the module design than is shown by respondent 066, this respondent has not undertaken the directed activities which form a crucial part of the design. Whilst it might be inferred that a high level of relevant learning activities is a necessary condition for the achievement of congruence between a student and a lecturer's perception of learning, this cannot be interpreted as a causal link. Rather it might be argued that those students who interpret the outcome statements assessment criteria and tasks and infer from the teaching sessions how the lecturer perceives both the what and the how of learning, then undertake, as a consequence of this perception, the kind of learner action which is conducive to the achievement of the outcomes which have been stated. This is wholly consistent with the theoretical underpinning of this thesis, and with its emphasis on both the what and how of learning suggests why students taking outcome-led modules are more likely to hold conceptions of learning which are congruent with their lecturer's conception than students on traditional modules.

**Level 3**
The data for the level 3 learning outcome-led module shows a slightly lower proportion of congruence between student and lecturer's perceptions (Table 4.7) than in the level 2 outcome-led module, but a much higher proportion than on any of the traditional modules. 15 out of the 21 students on the module (71.4% of respondents) were categorised in conception D which was consistent with their lecturer's expectations for this module. Four students were classified in category B and one student in category C (Figure 5.7). Each of these five respondents held a quantitative conception of learning which was at variance with the expectation of learning held by the module tutor.

Only one out of the five students who held a different conception of learning from that of the module tutor was aware from the start of the module that she was studying an outcome-led module, one had become aware when working on the first assignment, one on the day of the questionnaire, one at the time of the focus group interview and one.
student did not state when or indeed if he/she had become aware of the type of module being studied. It was suggested in 4.1 that the earlier the awareness of the learning outcome-led design the more likely the student was to both hold a conception of learning consistent with that of his/her lecturer and to take action in response to the module learning experience. The high proportion of students with a misconception of

![Figure 5.7 Level 3 Outcome-led Module Incidence of Conceptions](image)

learning in this level 3 module who were not aware of the design at the beginning of the module lends further support to this hypothesis.

However the lack of awareness of the outcome design per se did not preclude these respondents from being au fait with the outcomes of the module. They all felt strongly that there was a clear statement in the guide of what was expected of them in the module and that the tutor reinforced this. None considered that they needed to seek clarification about learning in this module from either their tutor or from other students. But it has already been suggested that the recognition of a clear statement of what learning is about does not necessarily result in congruence of perceptions between students and lecturers. All five of these students acknowledged that the outcomes of learning had been clearly expressed, but they all failed to internalise and act upon the messages the outcomes carried about the depth of understanding, the need for a critical approach and the recognition of contradictions and
tensions in the issues surrounding the subject of the module; they all misinterpreted both the **what** and the **how** of learning in the module.

Notwithstanding her misconception Respondent 086 (Table 5.12) was very positive in terms of her appreciation of the items implicit in the construct labelled 'congruence' (see 5.6.6). She focused very heavily on the teaching context stating that the weekly sessions, the seminars and the content of the taught sessions all very strongly influenced the focus of her learning whilst respondent 095 recognised that the weekly sessions had helped him to achieve the outcomes, but he was less sure about the significance of the seminars and the content of the module.

Both of these respondents showed a limited commitment to learning activities and to taking responsibility for their own learning in response to the design features of the module. Both failed to use the directed reading to prepare for taught sessions, unlike respondent 086, respondent 095 did not use the weekly programme to plan his reading.

**Table 5.12 : Student responses to learning outcome module design features in the level 3 module**

<table>
<thead>
<tr>
<th>Congruence</th>
<th>086</th>
<th>095</th>
<th>098</th>
<th>094</th>
<th>085</th>
</tr>
</thead>
<tbody>
<tr>
<td>The weekly sessions help me to achieve the outcomes</td>
<td>√</td>
<td>?</td>
<td>?</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>The module tutors make it clear from the start what is expected</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>The seminar sessions help me to understand the outcomes of the module</td>
<td>√</td>
<td>?</td>
<td>?</td>
<td>x</td>
<td>?</td>
</tr>
<tr>
<td>There is a clear statement of what is expected</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>?</td>
<td>√</td>
</tr>
<tr>
<td>The close link between the outcomes, the sessions and the assessment influence what I learn in this module</td>
<td>?</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>?</td>
</tr>
</tbody>
</table>

**Learning Activities**

| I use the weekly programme to plan my reading                             | √   | x   | √   | x   | x   |
| I use the directed reading to prepare for taught sessions                 | x   | x   | x   | x   | ?   |
| The module guide helps me to map out what learning is about in this module| √   | √   | √   | ?   | x   |
| The outcomes give me confidence to concentrate on my personal interests   | √   | x   | ?   | x   | x   |
| The content of the taught sessions influences the focus of my learning    | √   | ?   | √   | ?   | x   |
| I make use of the assessment criteria to decide on what to learn          | √   | √   | √   | √   | x   |
| I make use of the descriptions of the assessed tasks to focus my learning | ?   | √   | ?   | √   | ?   |
| The reading list helps me to focus my learning                           | √   | ?   | √   | ?   | ?   |
though both respondents made use of the reading list given in the module guide. Whilst respondents 086 and 095 made use of the assessment criteria, the former was equivocal about her use of the assessment tasks to focus her study and neither used the self-assessment to inform their learning. Respondent 098 showed an identical response to learner directed activities as respondent 086 but less reliance on the seminars to inform her learning. Respondent 094 suggested that he/she had gained even less benefit from the teaching context, only the weekly sessions contributing towards learning in the module, and this student also responded negatively to four out of the seven activities designed to foster learner activity in the learning outcome-led modules.

Respondent 085, like all of the other four students, felt that the weekly sessions had helped to focus her learning, but this student was not influenced by the content of the module and possibly not by the seminar sessions. Unlike the other four students she might have made use of the directed reading to some extent to prepare for the taught sessions, but she failed to show initiative in all but one of the learning focused activities.

These findings suggest that the five respondents in the level 3 module, like the two respondents from the level one module who held different conceptions of learning from the module leader, failed, in varying degrees to undertake the very tasks associated with the how of learning which were designed to challenge their preconceived ideas and thereby influence their perception of learning in the module. The level 3 students retained a quantitative conception of learning in spite of a more qualitative perception that was strongly presented to them through the module design, remaining resilient to change. These data give further support to the hypotheses that clarity is a necessary, but not sufficient condition for changing students' conceptions of learning, and that a high level of relevant learning activities is a necessary prerequisite to the alignment of students' and lecturers' conceptions.

Level 1 Learning Outcome-led Module
Detailed discussion with the module team for the level 1 learning outcome-led module (5.3.4) resulted in their conception of learning for the module being placed within category D to which 25 students (55.6%
of the module respondents) were allocated. The spread of responses on this module was wide in relation to the other five module analysed (Table 5.10) despite the high level of congruence between the lecturers' and students' perceptions of learning. This is explained by the two clusters of responses of conceptions (Figure 5.8), one around conception D (the lecturer's conception) and another around conception B to which

Figure 5.8 Level 1 Outcome-led Module

Incidence of Conceptions

Number of respondents = 45 (lecturer held a conception D)

![Bar chart showing conceptions B, C, and D]

Conceptions of learning

18 students (35.6% of module respondents) were allocated. A small group of 4 students (8.9% of module respondents) were also coded as having a conception of learning consistent with category C.

Whilst the percentage of respondents on this module who held a conception of learning congruent with their lecturer (55.6%) was more than four times that in the level 1 traditional module (13.6%), the incidence of congruence is considerably lower than on the level 2 and level 3 learning outcome-led modules (84.2% and 71.4% respectively). Whilst the hypothesis that students' conceptions of learning on outcome-led modules are more congruent with their lecturers' conceptions than students taking traditional modules still holds, these findings challenge the extent to which the outcome-led design has influenced students' perceptions of learning and promoted greater congruence between student and lecturer perceptions. An in-depth analysis of four students'
attitude towards learning in this module will now be discussed in relation to the design factors which influence students' perceptions which have been identified in this thesis, in order to ascertain how, and to what extent, these students have responded to the design factors.

5.7.3 An analysis of four in-depth interviews with students holding conception B on the level 1 outcome-led module

Respondent 050
This respondent's perception of learning is confined to the acquisition of knowledge which has to be reproduced for assessment purposes - a perception which is reiterated throughout his interview. He indicated in his questionnaire responses that he was aware of the three different types of outcomes in the module, giving an example of a subject specific outcome as the vocational and academic divide; a personal transferable skill as making a presentation and a generic academic outcomes as "in the critical analysis of different subjects" which he suggested was assessed through the essay. This suggests that the respondent might have a somewhat more qualitative perception of learning in the module than the conception he has been assigned to indicates. But when he describes an episode from another module it becomes clear that he has difficulty understanding what is meant by 'critical analysis':

"I mean the best example is with a x [his other subject] modules, and one in particular we had to critically appraise a coach. This guy I critically appraised him and to put it bluntly I think I tore him to shreds, and I was dead worried that somewhere along the lines he might get to see this, but I was told I hadn't been critical, now I really thought I had torn the guy to shreds" (R.050)

"so what you're really saying is, that these words like critical and analysis and so on, don't really mean anything, you don't, or at least you understand different things by them?" (author)

"yes, I must have a totally different understanding of critical analysis than what is expected of me " (R.050).

He goes on to state that there is a mismatch between his understanding and that of his peers.
"I mean, talking to other students about the outcomes, especially the younger ones, they seem to be, straight on the wave length, and I will say to them, well explain to me you know what's what, you know, I can't seem to get my head around what they are saying either, you know maybe I'm old and set in my ways or something like that."

Ostensibly this respondent 'knew' that learning in the module was more than just acquiring information, he was certainly aware of it, but in spite of this his conception of learning remained at level B. It seems that he cannot appreciate and internalise what it means to be critical and words like 'critical' and 'analysis' do not really mean anything to him or, at best, he understand these words differently from his peers and tutors. The suggestion that he is set in his ways, is perhaps particularly significant for this mature student (in the age range 36-40) who has very strong preconceived ideas about what teaching and learning involves which date from his secondary school days. Thus he explains:

"I'm not very good about picking up hints about what is required, I think it's with my age and the way I was brought up in school, I actually did mention it to one lecturer, I came here to learn, I didn't come here already knowing it, and I have a problem with it, I sit in lectures and expect to be taught whereas in a lot of cases you're not taught you are given information and I see this as quite a big difference between being taught and being given the information" (R. 050)

"What to you mean by being taught?" (author)

"this is going to sound a bit strange - someone saying you will do this, you will go away and read this, you will come back and you will have read page one to seven, parrot fashion type learning. I have problems now with some lecturers, because the way they put things over- it goes straight over my head, because I don't know where they are coming from, I think I actually let myself down, because I have been away from education for so long, and because I have done things that are totally different I have probably got an attitude problem, as far as a lot of lecturers are concerned, it's not an attitude that I don't think they can
do the job, they are probably brilliant at the job, but I have a mental problem, being able to take back and deal with what's got to be done with the information" (R. 050).

This statement is consistent with the respondent's questionnaire responses in which he states that the weekly sessions did not help him to achieve the outcomes and the seminars did not help him to understand the outcomes of the module (see Table 5.13). He did, to some extent,

**Table 5.13: Student 050 responses to learning outcome module design features in the level 1 module**

<table>
<thead>
<tr>
<th>Congruence</th>
<th>050</th>
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<tbody>
<tr>
<td>The weekly sessions help me to achieve the outcomes</td>
<td>x</td>
</tr>
<tr>
<td>The module tutors make it clear from the start what is expected</td>
<td>?</td>
</tr>
<tr>
<td>The seminar sessions help me to understand the outcomes of the module</td>
<td>x</td>
</tr>
<tr>
<td>There is a clear statement of what is expected</td>
<td>?</td>
</tr>
<tr>
<td>The close link between the outcomes, the sessions and the assessment influence what I learn in this module</td>
<td>?</td>
</tr>
</tbody>
</table>

**Learning Activities**

| I use the weekly programme to plan my reading                            | √   |
| I use the directed reading to prepare for taught sessions                | √   |
| The module guide helps me to map out what learning is about in this module | √   |
| The outcomes give me confidence to concentrate on my personal interests  | ?   |
| The content of the taught sessions influences the focus of my learning   | √   |
| I make use of the assessment criteria to decide on what to learn         | x   |
| I make use of the descriptions of the assessed tasks to focus my learning| ?   |
| The reading list helps me to focus my learning                          | x   |

respond to the teaching context as he agreed that the content of the taught sessions influenced the focus of his learning. But his preconception is very much dominated by his belief that learning is synonymous with the acquisition of knowledge and so the 'content of the taught sessions' is interpreted as solely being the factual dimension of the module. The outcome design challenges this belief such that in this module he is aware of the more qualitative outcomes but he still retains the notion that learning is about acquiring and reproducing as much
information as possible even though he 'knows' that he should be adopting a more critical and analytical approach. Thus he explains:

"I had the outcomes and the criteria in mind to start with when I was working on the assignment, but when it actually came to doing it, I think I had a breakdown as far as that goes, because I tended then to try and put in everything that I possibly could and you know, a lot of it will be irrelevant...I try, that's where I feel that being away from the education environment for so long has a major effect, where as a kid can sit down, and they can keep that in their brain, they can keep this ticking through, I think why bother then I will get another piece of information come to my head, that may be is totally irrelevant but I still put it in, because I'm er, I'm trying to think of a pleasant way of putting it, I tend to cover my arse".

The assessment criteria had been read late in the module when he was working on the assessment, but they were misread at this point as reinforcing his established view that learning was about acquiring and collating information. He had not made use of the criteria earlier in the module to inform his perception of the how of learning and it was only in retrospect when he put the criteria and the outcomes together that he appreciated that he had misinterpreted the outcome statements which his assignment failed to address. He comments:

"to be totally honest, probably they [the assessment criteria] didn't really enter my thoughts until after I had handed them (the assignments) in, then I sat there thinking oh no, I haven't met this I haven't met that."

Whilst he can describe the criteria he cannot relate to them, as he explains:

"I don't really use them properly, probably I'm a bit thick in that department, I don't understand exactly what is required...I mean I have always said to anybody that asks I don't expect to pick As up. I think in a way that attitude does let me down, because in having the attitude where as you only have to pass maybe it's subconscious, I probably totally understand the D7 or the D5 type criteria whereas the others I might not get my head fully round them, it's back to the criticising and analysing, how I deem them to be, how my beliefs of
them are totally different to the lecturers’ expectations and I feel I have to try to get my way of thinking to match what is expected”.

Whilst this respondent does make use of the reading list to direct his reading this does not serve to change his deep-rooted conception of learning, but merely to give him a focus for his information gathering:

“I read it [the list] I took it in and then basically then I went away and read as much material of the titles supplied as I possibly could... I got the information from the lectures, and sort of cross-referenced things with the reading. That was where I actually did the learning from, the reading side of things has never ever been a problem, because I can pick a book up and read it from cover to cover”.

Consistent with his quantitative conception of learning he undertakes appropriate reading but with a view to taking in as much information as possible rather than to analysing the material. He refers to ‘cross-referencing’ in terms of gaining more information based on the content from the taught sessions rather than analysing and making connections between concepts. He claims to be able to ‘use it’ at the beginning of the module, by this he seems to mean to make sense of the information, but when he comes to try and apply it, demonstrate understanding or even make a decision about what to include in an assignment then he encounters problems:

“the reading provided me with the information but I have just got my own mental problem, whereas I can use it when there’s no pressure at the beginning of the module I can make sense of it, but the nearer it gets to handing it in time the further it goes out the window, and then it’s a case of, right oh, you have all that reading, you have read that and you use that and put that in and put this in and then after you have done everything and you’re handing it in, well I think I shouldn’t have put that in or that in at all.”

Whilst the respondent would not admit to being under stress at the time of assessment, the tension he feels compounds his tendency to focus on relating the information he has acquired:
"well I have always described myself as a person that tends not to worry about things and tends not to panic, but I have to admit that this year changed things, I do not panic as such but I do concentrate wholly on one thing and forget about everything else, if you know what I mean".

Thus this respondent regards learning as essentially being about remembering, his quantitative approach, which is reflected in this description of how he goes about the assignment, is consistent with his quantitative conception of learning and corroborates Säljö's (1979) assertion that there is a relationship between learning conception and the study strategy adopted by students. He undertakes the weekly reading but his approach results in more and more information being acquired which, compounded by the anxiety he experiences as he is required to select and present his knowledge for assessment approaches, he has difficulty in processing; he 'knows' that the generic academic criteria - which shape the how of learning - include taking an analytical approach, but he has not taken this on board and it has not influenced the way he has undertaken his reading such that he has accumulated more and more information without attempting to analyse and categorise it. He has shown some initiative in terms of the learning activities (Table 5.13) designed to integrate directed time and the taught sessions and facilitate the achievement of the assessed outcomes. He has undertaken the directed reading to prepare for taught sessions and used the weekly programme to plan his reading, but the directed time activities have failed to encroach on his entrenched conception of learning. He made little effort to appreciate the implications of the assessment criteria and did not use the descriptions of the assessed tasks to focus his learning. The teaching context had some influence on his perception of learning but it reinforced his quest to acquire information rather than broadening his perception of learning. His lack of action in respect of the assessment tasks and criteria compounded his misconception of learning in the module and precluded him from perceiving the link between the assessment sessions and the outcomes of the module. Strongly held preconceived ideas regarding the nature of learning seem to militate against the respondent changing his conception of learning in spite of his awareness of the outcomes of the module which he ostensibly assimilates which confirms Kagan's
assertion that "pre-existing beliefs are tenacious even in the face of conflicting evidence" (1992, p. 76).

Respondent 022
The categorisation of this respondent’s conception of learning inferred from the questionnaire was also confirmed as being conception B during the interview. The reasons for the mismatch will now be analysed.

Unlike respondent 050 this student had stated in the questionnaire that she did not really become aware of the learning outcomes until she was preparing for her first assignment, this was confirmed in her interview:

“when we first got the module guide I thought what are these for? Then later when they were explained to us as well that they were learning outcomes, then they were actually explained, so it really was only in preparation for the first assignment that I really knew what they were about”.

Once aware of the outcomes, she knew that they had been described in three types in the module guide, giving the example of post 16 education for a subject specific outcome and the presentation as an example of a personal transferable skill. Her grasp of the academic outcomes was more limited; the only suggestion she made in the questionnaire was ‘comparing academic education to vocational’ and she was not able to elaborate on this during the interview. Her lack of appreciation of the scope of the generic academic outcomes is consistent with her limited conception of the how of learning in the module. The outcome statement seems to have made little or no impact on her perception of learning in the module, merely compounding her quantitative and narrow conception. Yet, from her perspective, she was confident that the outcomes had given her insight into what was expected in the module; she suggested that they were useful because with the outcomes:

“you have a clear idea of what you’re supposed to be doing. I mean there’s no point in learning about something that you don’t need to know about, you know if you go off and find something on one thing and you don’t need it then there’s no point..... The module guides are much, much more helpful and it’s all set out,
exactly what you have to, you know, the learning outcomes and everything, it's all set out, what you have to learn".

She considered that she had understood what the outcomes entailed, but she only internalised statements which reinforced her preconceived conception. She was so confident that she found them clear and not requiring elucidation that she did not feel the need to attended her tutorials to clarify issues, unlike in her other subject where:

"it's quite, quite ambiguous really, and you have to, you must it's more necessary to go for tutorials to ask the lecturer what they mean by what they say. Whereas in education it's actually written out for you what you have to do. So learning's really just fulfilling the learning outcomes I think and doing the relevant reading".

The learning outcomes appear to have been interpreted by her as removing any notion of ambiguity as far as this module is concerned, and by confirming her belief, held at 'presage' that there is a right answer. This contrasted with her other subject:

"in education you know if you write something that's not the right thing. But for example, with x [her other subject] then it's hard to tell what's wrong and what's not, but whereas in education, some of it was already written for you, sort of written out for you what you had to cover."

Thus her quantitative conception of category B, her belief that learning is about what she has to 'cover' has been confirmed, rather than challenged by her interpretation of the outcome statements; the latter having failed to have any impact on her. This may be attributable to the fact that she did not take notice of the outcomes until midway in the module, by which time she had a clear, if erroneous, view of what learning entailed in this module. This supports the hypothesis that the earlier the awareness of the learning outcome design the more likely the student is to change his/her perception of learning in the module and corroborates the research of Svensson and Högflors (1988) who found that lifting conceptions of learning to a conscious level seemed to be an
important stage in helping students to change their conception of learning.

It is reasonable to assume that factors other than the outcome statements had influenced the development of her conception of learning. When questioned about how she had come about her idea of what learning was in the module. This respondent explained:

"erm, I think at first what’s very important, is the introductory lecture, then I think if you miss that then you can feel like you’re behind for a couple of weeks, because that’s like the basic outline and I think the reading as well, like the first week of the reading then that’s important to do as well, because then you sort of know what they’re getting at if you’re with me”.

She has taken her clues from the first lecture and from the detailed reading list, the latter she particularly made use of:

"you’re not going to the library and picking out books that you think from the title would be relevant, but then when you actually get them you know that they’re not, you already sort of have an idea in your head of what you’re going to be looking for. I also think it’s a lot easier to pick out what you’re going to need from a book in education than it is with x (her other subject), I think it’s a little too vague there to be honest”.

But whilst the sources of reading were clear to her, a distinctive feature of the learning outcome design is also that students undertake weekly reading activities related to the taught sessions during their directed time to facilitate their learning in the modules. The design seeks to inform both the what and the how of students’ conception of learning by specifying the relevant texts and by indicating how they should be read. When asked whether she undertook this weekly reading her response was somewhat equivocal:

"yes I did do it, I do it most weeks, I do try to do it, erm, I don’t do it every week, erm, but when I do it, it always helps me. There was one in this module, the lecture about ..... I did try to do the reading for that before the lecture, and I didn’t understand anything and then when I did it after the lecture, it was much
easier to do. It was very helpful then I thought so”.

But more positive in describing how she made use of the directed reading, during those weeks when it was undertaken:

“When you did do the reading from it, then you knew you’re not going into the lecture blind, not knowing what it’s going to be and you know what the lectures going to be about and stuff, so even if you can’t find the book that has been recommended, if you know what the lectures going to be about, you can just look at another book instead, so you have some sort of idea of what you need to know”.

and in stating how it informed her learning:

“I think it helps that the lecturer is saying something that you have already read about, it’s like you know if you’re not in agreement with it or you can disagree, or whatever, then you know that you’re getting something out of it, rather than if you’re just sitting there thinking what? So I do think it helps in that sense”.

There is a glimpse in this statement that the respondent was able to transcend her quantitative perception of learning on the occasions when her independent action anticipated and complemented ‘teacher action’ in the taught sessions. This suggests tentatively that because the student was already in possession of the information being transmitted she did not need to focus on acquiring the knowledge which she felt was at the core of learning in the module, and she was therefore receptive to the teacher-led action which was about more than factual information on which she normally focuses. But the insight which she describes here was neither sufficiently frequent or sufficiently significant to challenge her quantitative conception of learning in the module.

There is evidence that this respondent has been influenced, to some degree, by the guidance given in the module guide, selecting strategies which supported her learning namely following the module guide and reading from the indicative list. Whilst she did prepare for some of the taught sessions she was equivocal about the extent to which she used the weekly programme to plan her reading (Table 5.14) she eschewed those aspects of the design which aim at harnessing students’ concentration on assessment to influence how they perceive learning in
Table 5.14: Student 022 Responses to Learning Outcome Module Design Features in the Level 1 Module

<table>
<thead>
<tr>
<th>Congruence</th>
<th>022</th>
</tr>
</thead>
<tbody>
<tr>
<td>The weekly sessions help me to achieve the outcomes</td>
<td>√</td>
</tr>
<tr>
<td>The module tutors make it clear from the start what is expected</td>
<td>?</td>
</tr>
<tr>
<td>The seminar sessions help me to understand the outcomes of the module</td>
<td>?</td>
</tr>
<tr>
<td>There is a clear statement of what is expected</td>
<td>?</td>
</tr>
<tr>
<td>The close link between the outcomes, the sessions and the assessment influence what I learn in this module</td>
<td>√</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning Activities</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>I use the weekly programme to plan my reading</td>
<td>?</td>
</tr>
<tr>
<td>I use the directed reading to prepare for taught sessions</td>
<td>?</td>
</tr>
<tr>
<td>The module guide helps me to map out what learning is about in this module</td>
<td>?</td>
</tr>
<tr>
<td>The outcomes give me confidence to concentrate on my personal interests</td>
<td>?</td>
</tr>
<tr>
<td>The content of the taught sessions influences the focus of my learning</td>
<td>√</td>
</tr>
<tr>
<td>I make use of the assessment criteria to decide on what to learn</td>
<td>x</td>
</tr>
<tr>
<td>I make use of the descriptions of the assessed tasks to focus my learning</td>
<td>x</td>
</tr>
<tr>
<td>The reading list helps me to focus my learning</td>
<td>√</td>
</tr>
</tbody>
</table>

a module. This is exemplified particularly in her lack of utilisation of the assessment tasks and criteria as the following discussion illustrates:

"I didn’t, I didn’t really use the self-assessment, I don’t like doing self-assessments" (R.022)

"you don’t?" (author)

"no" (R.022)

"why not? " (author)

"because I never know what I’m supposed to put, because I never want to put myself down and I never want to blow my own trumpet either, I don’t much like doing them" (R.022)

"you don’t find them useful?" (author)
"no, I don’t actually I just sort of do them, because they should be done, it’s not either here or there to me to be honest" (R.022).

"you didn’t look at the assignments and the outcomes at the beginning of the module to help you to think about the kind of learning you are expected to undertake?" (author)

"no, I didn’t actually, I just did what had to be done" (R.022).

Because she came to the module with a very strong preconception about 'what had to be done', she was confident that she knew what this was without referring to the module guide.

Like respondent 050 this student has a quantitative conception of learning in this module; they both regard learning as essentially about acquiring facts about post 16 education. Both of these students devote their energies to acquiring knowledge and to supporting the what the content dimension of ‘teacher action’ of the taught sessions, and both are very poor at undertaking appropriate learning activities and taking responsibility for their own learning other than by acquiring more facts. Neither of them have been influenced by the outcome-led design, neither of them have attached importance to the self-assessment task and in both cases the assessment criteria have failed to inform their conception of what learning is about in the module. Thus the preconceptions which they held at ‘presage’ have not been challenged by the design of the module.

Respondent 017
The categorisation of this respondent's conception of learning as being within the quantitative category B inferred from the questionnaire was confirmed by the interview. Whilst she was aware of the tensions within the content of the module she still did not see the how of learning as analysing these tensions or indeed adopting a critical stance in explaining them. Her interpretation of the generic academic outcomes was confined to contributing to the furtherance of a knowledge base; she interpreted them as consolidating the schema which she had brought to
the module. She saw learning in the module as undertaking considerable reading in order to acquire knowledge in order to fulfil the assessment requirements.

Like respondent 022 and four respondents on the level 3 outcome-led module, her questionnaire suggested that this respondent was not aware of the outcomes from the beginning of the module, she only appreciated their existence when she began to address issues relating to the first assignment. She confirmed this during the interview:

"I mentally bracketed them as aims and objectives. I didn't really notice the difference between aims and objectives and outcomes. To me outcomes actually cover the fact that you've learnt something during the time that you've been on that course, and you're able to prove that you have benefited from the course" (R.017)

"But, you said that you weren't aware of them until you were working on the first assignment, and presumably when you did the first assignment you went back to look at the outcomes, would that be reasonable, or don't you know?" (author)

"Yes, I think that's quite true. I became more aware of them while I was actually doing the essay. Because before I'd been so busy researching and gathering the information. It wasn't until I actually sat down, to collate it, put it all together, that I realised exactly where I was as far as the outcomes were concerned" (R.017)

Ironically this respondent was so confident about her need to gather information that the outcome statements, which might have challenged this perception of learning, were not considered seriously at the beginning of the module. But when questioned on how she had come to decide on what learning was about in the module, she stated that she thought it was made clear in the module guide; this she clarified in more detail:

"so what is it about the module guide that told you what learning was about in the module? Can we explore that a little bit?" (author)
"yes. We were given, weekly summaries of what was going to be covered during the session and also the reading lists, and this gave me clues, and obviously once you've got a particular reference point in the library you can then find other books on the same subject" (R017)

"so you used the reading list quite a lot did you?" (author)

"quite often yes" (R.017)

'and so, how did you use them, can you explain how you used it?" (author)

"well, I went into the library, looked up the Dewey reference on the book that's recommended, and then went to that section in the library and looked through other books. Basically I had a quick scan through the chapters in the fronts of the books to see if they covered the topics that were explained in the lesson" (author).

Here is another example of a respondent who made use of the suggested reading to provide relevant information related to the module, but for whom there is no evidence that the reading had any impact of how she saw learning. Her quantitative conception dominated such that, consistent with the underlying theory, she used the reading to acquire more knowledge to fulfill her assumption that learning in the module was essentially about gathering more and more facts related to the subject matter. This supports the assertion, already made, that extensive reading does not necessarily lead to a change in perception and that it might well reinforce existing preconceptions because the learner makes selections, consciously or unconsciously, based on his/her conception of learning.

This respondent, who also conscientiously undertakes the directed reading to prepare for the taught sessions, describes how these activity are used by her:

"Well I tried to read up in advance, because not being based at this site, the library is only accessible to me once a week. So I made a point of reading up in advance. Getting as far ahead as I possibly could, so that
in the lessons, I would then know at least what they were talking about and there wouldn’t be the ‘bun fight’ for the reading”.

She can thus ‘get as far ahead as possible’ in terms of the content of the module; she does not once mention becoming more critical, analysing more or considering the tensions in the issues about which she has acquired so much knowledge. Unlike respondents 050 and 022 this respondent does make use of the descriptions of the assessed tasks to focus her learning (Table 5.15), but like them she fails to make use of the assessment criteria to decide on what to learn, stating that she only

<table>
<thead>
<tr>
<th>Congruence</th>
<th>017</th>
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<tbody>
<tr>
<td>The weekly sessions help me to achieve the outcomes</td>
<td>✓</td>
</tr>
<tr>
<td>The module tutors make it clear from the start what is expected</td>
<td>✓</td>
</tr>
<tr>
<td>The seminar sessions help me to understand the outcomes of the module</td>
<td>✓</td>
</tr>
<tr>
<td>There is a clear statement of what is expected</td>
<td>✓</td>
</tr>
<tr>
<td>The close link between the outcomes, the sessions and the assessment influence what I learn in this module</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Table 5.15: Student 017 Responses to Learning Outcome Module Design Features in the Level 1 Module**

<table>
<thead>
<tr>
<th>Learning Activities</th>
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<tbody>
<tr>
<td>I use the weekly programme to plan my reading</td>
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<tr>
<td>I use the directed reading to prepare for taught sessions</td>
</tr>
<tr>
<td>The module guide helps me to map out what learning is about in this module</td>
</tr>
<tr>
<td>The outcomes give me confidence to concentrate on my personal interests</td>
</tr>
<tr>
<td>The content of the taught sessions influences the focus of my learning</td>
</tr>
<tr>
<td>I make use of the assessment criteria to decide on what to learn</td>
</tr>
<tr>
<td>I make use of the descriptions of the assessed tasks to focus my learning</td>
</tr>
<tr>
<td>The reading list helps me to focus my learning</td>
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</table>

used the criteria, to help her to reach the highest possible mark. Like respondents 050 and 022 she did not make use of the self-assessment to inform her learning. Indeed she was somewhat vague about this aspect of the module design:

“when you did the self-assessment, did you use the assessment criteria to inform your views?” (author)
"I think there was a tick sheet, I'm not 100% sure. Yes, I felt it was very difficult filling that in. Because I wasn't sure how I compared with other people, so I didn't know whether I would be boastful if I put I was, quite good standard, and I didn't know where I stood anyway, I didn't know .. So I didn't know whether I was doing well, badly or what, so that was very difficult to fill in. And I think I erred a little bit, I think I was a little more cautious than I needed to be" (R.017).

There is no evidence that she made use of the self-assessment to achieve any more than a quantification of her achievement; she does not perceive it as a strategy for helping her to take responsibility for her own learning.

As with respondents 050 and 022, this student's preconceived perception of what learning is about led her to make the assumption that it was about acquiring knowledge and that the information gathering and collating approach, which she had previously adopted successfully, would suffice in this module. Whilst she was eventually aware of the different types of outcome, she had made an inappropriate inference regarding the kind of learning suggested by the generic academic outcomes and like respondents 050 and 022 she failed to see learning in the module as developing a critical and analytical perspective on the academic/vocational divide. For respondent 017 too, the 'presage' factor was so firmly embedded that the outcome-led design failed to challenge the way she perceived learning, although this respondent showed more initiative in terms of learning activities than either respondent 050 or 022, making use of both the reading lists and the weekly reading to give focus to her information gathering activity. This is consistent with her quantitative conception of learning in the module; indeed there is ample evidence that she adopted a surface approach: she perceived the what of learning as acquiring and collating facts; she wanted to read to 'get as far ahead as possible' not to make connections between ideas and concepts; she thought that self-assessment entailed completing a tick sheet rather than as a stimulus for self-reflection all of which would be wholly congruent with, and predictable, given her narrow conception of learning. This corroborates the research findings of Entwistle and Ramsden, (1983); Watkins, (1983); Marton and Säljö, (1976,1984); Van Rossum and Schenk, (1984) Biggs, (1987) and Whelan, (1988) who each
propose that a student's approach to learning in a certain context will be determined by his/her conception of learning. Like respondent 050 and 022 this student has directed her energy more towards learning facts and information, towards supporting the content of the teacher-led sessions or ‘lessons’ as she refers to them, than towards developing her own learning. But unlike them, she suggested in her interview that she had learned from the experienced and that in subsequent modules she would pay far more attention to the outcome-led design at the beginning of the module.

Respondent 048
Unlike respondents 022 and 017, this student was aware from the outset that this was a learning outcome module and that there were three types of outcomes. She had a clear and accurate perception of both subject specific outcomes and transferable skills. In the questionnaire she had given an example of a generic academic outcome as ‘looking at different texts’, whilst this was wholly consistent with her quantitative conception of learning, it indicated that she did not have a grasp of either the nature of these outcomes or their implications for the kind of learning expected in the module. She was unable to elaborate on her perception of generic outcomes during the interview appearing to have little appreciation of what it means to be critical. Like respondents 050, 017 and 022, this student was aware of the existence of the outcomes, but she had only internalised those facets which were consistent with her preconceived conception of learning, and like respondents 050 and 017 there was no evidence to suggest that the learning outcome statements had had any influence on the way in which she perceived learning in this module. When asked whether she had used the outcomes to inform her learning she replied:

“probably not, I probably looked at them, but I don’t think I thought much about them, I didn’t assess it every week, and think I want to learn this or that.”

There was, however some positive response in relation to other design features of the module. Although she did not make use of the assessment criteria to inform her perception of learning early in the module (Table 5.16) she did use them to provide a scaffold for her strategic approach:
“so you looked at the assessment criteria, how did you make use of them?” (author)

“for the assignment, then you can take it a step at a time to make sure you have covered yourself on each outcome, it’s useful, because you know what you’re looking for then, and you know what’s expected of you” (R.048).

Table 5.16: Student 048 Responses to Learning Outcome Module Design Features in the Level 1 Module

<table>
<thead>
<tr>
<th>Congruence</th>
<th>048</th>
</tr>
</thead>
<tbody>
<tr>
<td>The weekly sessions help me to achieve the outcomes</td>
<td>?</td>
</tr>
<tr>
<td>The module tutors make it clear from the start what is expected</td>
<td>X</td>
</tr>
<tr>
<td>The seminar sessions help me to understand the outcomes of the module</td>
<td>√</td>
</tr>
<tr>
<td>There is a clear statement of what is expected</td>
<td>?</td>
</tr>
<tr>
<td>The close link between the outcomes, the sessions and the assessment influence what I learn in this module</td>
<td>?</td>
</tr>
<tr>
<td>Learning Activities</td>
<td></td>
</tr>
<tr>
<td>I use the weekly programme to plan my reading</td>
<td>?</td>
</tr>
<tr>
<td>I use the directed reading to prepare for taught sessions</td>
<td>?</td>
</tr>
<tr>
<td>The module guide helps me to map out what learning is about in this module</td>
<td>√</td>
</tr>
<tr>
<td>The outcomes give me confidence to concentrate on my personal interests</td>
<td>√</td>
</tr>
<tr>
<td>The content of the taught sessions influences the focus of my learning</td>
<td>√</td>
</tr>
<tr>
<td>I make use of the assessment criteria to decide on what to learn</td>
<td>X</td>
</tr>
<tr>
<td>I make use of the descriptions of the assessed tasks to focus my learning</td>
<td>?</td>
</tr>
<tr>
<td>The reading list helps me to focus my learning</td>
<td>√</td>
</tr>
</tbody>
</table>

When asked whether this was the only way she had made use of the criteria she replied:

“yes, because they stop you from swaying off the title as well, and you know you would look at the title and you have your criteria and you just stick to those, because otherwise you can put too much in......all you want is information”.

Whilst the criteria directed the student to analyse critically and consider the tensions and paradoxes implicit in the subject of the module she
misinterpreted their meaning; her fixation with factual content rendered her purblind and oblivious to any perspectives which did not correspond to her perception of what learning was in the module. This is consistent with Morgan’s (1993) observation that students who hold a quantitative conception of learning only respond to those sections of lectures which deal with the presentation of facts.

There is, however, a hint that the self-assessment served to inform the how of learning and thereby to encourage the respondent both to take responsibility for her own learning and to adopt a more critical approach:

“it was at the end of the module you did your self-assessment and you actually sat and looked back at what you have done over the semester” (R.048)

“you found that useful?” (author)

“yes, because you can look at yourself and look at what you have done, and what you haven’t done so you can actually criticise yourself and it doesn’t matter what others think, but because you hand your assessment in with your essay you put what you think you’ve done right” (R.048).

The directed reading was undertaken, spasmodically, and with an approach consistent with the respondent’s quantitative conception of learning in the module:

“did you do the directed reading activities at all?” (author)

“some weeks, you don’t do it every week, I don’t think anybody did” (R.048)

“did you use the readings?” (author)

“yes, but more at the end when I was actually doing the essay, but before I got most of them when I was actually planning my essay...I read them yes, but not actually reading and taking it in as well” (R.048)

“What do you mean about taking it in, can you just talk to me about that a bit? (author)
“it’s one thing reading it, and then there’s understanding it, so you know, you read it once and put it to one side and that’s it” (R.048).

With respect to her use of the weekly programme she was equally equivocal:

“did you use the weekly programme to plan your work?” (author)

“I did, but I didn’t always, I started getting the photocopies and things, but it’s one thing actually taking it in. You know what to expect each week because it was set, we were told exactly what the session was going to be about and you had your criteria, and everything was just there at hand for you, and so you knew what you were doing week by week and what was due in when and so you could plan your diary then” (R.048)

She again refers to the extent to which she ’took it in’. As with respondents 050, 017 and 022 there is evidence that this student responded to the module design, but again within the boundaries of her preconceived perception of what learning was about in the module. It was almost as if she went through the motions of doing what was expected, her actions as a learner fuelling her strategic approach. There is no suggestion that the design features which were intended to inform students’ metacognitive knowledge (Nisbet and Shucksmith, 1984; Robinson, 1983;) and thus encourage her to question and reconsider the how of learning, have had any influence on her well established preconceived idea of what learning was about. So, like respondent 022, she felt reassured by the design and confident that she knew what learning was about in the module:

“it works, it made it easier for us, because when we are in X (her other degree subject) we are in a mess, because we don’t know what we are doing and when or where we are going we don’t know what is expected to come out of the module, but at least we know we had got the learning outcomes so, when we did the self-assessment and the assessment we knew what we were supposed to be doing".
This supports the hypothesis already proposed that clarity of outcomes is a necessary but not sufficient condition for changing students' conceptions of learning. For whilst the intentions and outcomes need to be made clear to the learner, he/she remains open to misinterpretation and may be erroneously inferred to compound students' misconceptions about learning. This respondent only selected and internalised those facets of the module which were consistent with her view that learning, was about acquiring information and using that information to fulfil assessment requirements. The design guided rather than changed her routine behaviour, it had reinforced her approach, rather than serving to inform her notion of learning and to engender a more reflective and qualitative perception:

“did the features of the module we have discussed change the way you looked at learning in that module at all?” (author)

“not really, no, it didn’t change it”(R.048)

“so you decided that getting the content and the knowledge would be the same for all the modules?” (author)

“yes” (R.048).

However like respondent 017, this student went on to say that in retrospect it had influenced the way she looked at learning in subsequent modules:

"so you weren’t influenced in this module, but what you’re saying, I think is that you, now you look back, you have been influenced?” (author)

“yes, but you don’t realise it at the time. I think, you have to take responsibility for your own learning I think that needs to be stressed more in this module, I don’t think it was actually stressed by my tutor you know, you have to go away and you have to re-assess this in the learning, I mean you need to go away and do the assignment, do it thinking in the back of my head I have to re-assess, what I have done, what have I learnt, I don’t think that was stressed enough” (R.048)
“so you think you have learnt from it, but you could have learnt more if that was emphasised more?”
(author)

“if you knew at the time, you would concentrate more on learning at the time, because you think it’s just knowledge based don’t you, you assume, because you have been given information every week, that that’s all that you need, you just need to know the information”
(R.048).

The respondent, now in her second year, went further to explain that the fact that the first year modules did not count towards the degree classification and because she only needed to gain a bare pass, this had resulted in complacency towards her study:

“We took it with a pinch of salt in the first year, because you knew it wasn’t worth anything......Because we knew though from the start that it wasn’t towards the actual degree, so we just wanted to pass last year, to get to get onto this year and you knew it wouldn’t be part of the degree, so the grades weren’t important as long as we got through”.

Like respondent 050, she was aware of the existence of the outcomes from the outset of the module, and like all of the other three respondents she had a sound grasp of the subject specific and transferable skills. Consistent with respondents 050, 022 and 017, she also failed to make any inferences from the generic academic outcomes about the critical and analytical nature of the how of learning in the module. Her ideas about learning were very strong at 'presage' and like the other respondents interviewed in depth, her preconceived ideas were not challenged by the design of the module notwithstanding the fact that she did respond positively to certain features of the design. Unlike them her quantitative conception of learning was explained as much by her desire to only gain a minimum pass as to the strength of these ideas. She thus adopted a surface and achieving approach consistent with her narrow perception of learning. In terms of self-assessment this respondent was both less resistant to, and more conscious of, the process, whilst still seeking to reinforce 'teacher action' and input rather than undertaking learning activities and
accepting responsibility for her own learning. Whilst respondent 017 had showed signs that the module design had, in retrospect, urged her to question what learning was in subsequent modules, this respondent suggested more forcefully that the outcome-led design had instigated a review of what learning was in her second year modules, although it had failed to influence her in the level 1 module.
5.8 Summary

5.8.1 The following hypotheses have emerged from the analysis and presentation of data:

i. The earlier the awareness of the learning outcome design the more likely students are to share the same conception of learning as their lecturer;

ii. students on learning outcome designed modules have a more qualitative conception of learning than students studying traditional modules;

iii. there is a higher incidence of congruence between students' and lecturers' conceptions of learning on learning outcome designed modules than on traditional modules;

iv. providing a clear statement of the expected outcomes in a module is a necessary but not sufficient condition for aligning students' and lecturers' conceptions of learning;

v. a high level of learning activities relating to the module outcomes and therefore the taught sessions and assessment régime is a necessary condition for changing students' perceptions of learning;

vi. when the expected outcomes of a module are not clearly stated then students rely on lecturers and their peers to focus their learning.

5.8.2 The design factors in the learning outcome-led modules which have been identified as influencing student's perceptions of learning can be summarised by the following constructs:

i. congruence between the stated outcomes, the taught sessions and the assessment régime;

ii. learning activities which relates learning in directed time to the content of the taught sessions and the assessment tasks.

5.8.3 The design factors which have been identified as influencing student's perceptions of learning in all modules can be summarised by the following constructs:

i. clarity of module expectations;

ii. a teaching context which is linked to the expected outcomes and the assessment tasks;

iii. learning activities which are predicated on directed reading and a weekly programme.
Chapter 6 Conclusion

6.0 Introduction
All of the research in this thesis has been undertaken within a modular framework which imposes a rigid 15 week learning cycle on the processes of teaching and learning. Within this context, this thesis has sought to explore the implementation of an innovative learning outcome-led model of curriculum design in terms of its potential to shape students’ perceptions of learning, and of the features of the model which might be said to influence how students perceive learning in a given context. Students’ perceptions of learning are the focal point of this research, rather than the subject matter being taught or the strategies adopted by the teacher, premised on the theory that in order to improve teaching and learning lecturers must structure learning experiences differently so that students perceive them differently. This represents a shift from a design for teaching to a design for learning, from a cognitive to a metacognitive perspective on the learning process. The conclusions are drawn around the closely related themes which are interwoven into the thesis, and together with recommendations for implementation and for further research, form the remainder of this chapter:

6.1 the research design revisited;
6.2 conceptions of learning;
6.3 the learning outcome-led model;
6.4 the design features influencing how students perceive learning in context;
6.5 models revisited;
6.6 recommendations;
6.7 concluding comment.

6.1 The research design revisited
The research design proved to be wholly appropriate in terms of providing data to address the research issue and the specific research questions. The focus group interview was a particularly valuable instrument for gleaning a wide range of views on the design factors influencing how students perceive learning; its use endorsed Watts and Ebbutt (1987) suggestion that focus groups can be profitably employed to raise issues which are to be researched through a questionnaire. The
design, however, might have been improved in two respects: first in respect to the data relating to self-assessment. A variable referring to self-assessment was included in the original Likert scale questionnaire, the influences of the process having been signalled by a number of respondents during the focus group interviews. The item was subsequently removed from the questionnaire after the piloting stage in which it became clear that students did not have sufficient experience of self-assessment, notably in traditional modules, to give a valid response to the statement posed. In retrospect it would have been appropriate to add an open-ended question relating to the frequency and the way in which self-assessment was used to inform learning and the extent of the perceived value of the process. These questions were included in the in-depth interviews from where data referring to self-assessment emanate. The second weakness in the design relates to the number of in-depth interviews which were undertaken with respondents on the level 1 outcome-led module. In all eight interviews were conducted, transcribed and analysed but only four interviews were ultimately included in the formal data analysis; the amount of data which this instrument generated being too extensive to present in this thesis. Undoubtedly the analysis of the interviews contributed towards the formulation of emerging hypotheses relating to how the design features, which had been identified through the factor analysis, had had an impact upon how students perceived learning in a module and they also provided data to explain why some students had not been sufficiently influenced by the outcome-led design to change their conception of learning. The instrument therefore generated the data it was intended to produce to address the research questions, but the scope of the in-depth interviews was overly ambitious.

6.2 Conceptions of learning
A number of conclusions can be drawn which are isomorphic with current research into student learning but which were not discrete research questions in this study. The data show that students' approach to learning are found to be contingent upon their conception of learning, a finding which is consistent with that of Schmeck (1988) and Marton (1988) and which confirms the linkage made between conception and approach which is implicit in Ramsden's (1988) and
Prosser's (1995) models of learning in context which were discussed in Chapter 2.

Whilst the data supports Laurillard's (1978) finding that conceptions of learning are context-dependent, rather than being a characteristic of a student, the findings also corroborate the work of Gibbs (1992b) that if students are unclear about what learning is required, then they tend to adopt a surface approach to learning. The findings of this thesis build on this theory suggesting that where the module expectations, both in terms of 'the what' and 'the how' of learning are not made transparent to students then their existing beliefs about learning held at the inception of the module, remain unchallenged. This means that those students who hold a quantitative conception of learning at presage will continue to retain this perception in the new learning context even if their lecturers intend that they should adopt a qualitative conception.

A quantitative conception of learning, whilst consistent with a surface/atomistic approach, is also characterised by learner action which leads to the acquisition of factual information which is initiated by teacher oriented activities associated with the exchange of information within the teacher-led context. The process, 'the how' of learning, for such students derives from what they see as the function of the teaching context, namely to pass on information rather than from the kind of activities which involve developing learning skills and taking responsibility for their own learning. Entwistle's (1988) work demonstrated that a deep/holistic approach to learning resulted in "an active process of learning" whilst a surface/atomistic approach led to "little or no personal engagement" (p.24) on the part of the learner. The findings in this study suggest further that a distinct form of learner action which facilitates the accretion of knowledge, and which may be named 'teacher-oriented' action, can be directly related to a student's qualitative conception of learning as well as to a surface/atomistic approach.

Consistent with this theory, 'teacher-oriented' learner action is also displayed by students who hold very strong presage beliefs that 'the what' of learning is about the acquisition of immutable knowledge and 'the how' involves processes to achieve this goal. Students who hold
such a conception do not perceive taking responsibility for their own learning or undertaking reflective learning action as part of their own learning processes. This is apparent in both traditional modules, where there is little or no attempt to foster guided learning activities, and in learning outcome-led modules where there is a clear framework for developing metacognitive skills. It is as if a quantitative conception, whether it derives from a lack of clarity about learning or from a tenacious pre-existing belief about learning, renders a student purblind; he/she sees in the learning experience what his/her conception allows them to see. The well-established quantitative conception acts as a filter, the learner can only see acquisition of knowledge as 'the what' of learning and teacher-orientated action as 'the how'. This accounts for the misconceptions held by some students who were studying outcome-led modules but who remained impervious to the learning experience and whose deep-rooted beliefs about learning blocked their receptiveness to change.

6.3 The learning outcome-led model
Notwithstanding the small proportion of students who retained their preconceptions, the findings show that the outcome-led model has brought about changes in how students perceive learning. There is a smaller proportion of respondents studying learning outcome-led modules than taking traditional modules who are categorised as holding a qualitative conception of learning, and more students on learning outcome-led modules have a qualitative conception of learning than students on traditional modules. The learning outcome-led design has also resulted in a much greater degree of congruence between how lecturers and students perceive learning in a given context which contrasts with the mismatch between the conceptions of learning held by lecturers and their students studying the traditional modules. This suggests that the outcome-led model does have the potential to improve teaching and learning in a modular context where learning is taken to mean effecting conceptual change in the subject matter being studied (see 2.4.3) and therefore that there are justifiable educational grounds for its adoption in higher education.

The findings also show that the earlier the awareness of the learning outcome-led design within a 15 week module, the more likely the
student is to hold a conception of learning consistent with that of his/her lecturer and to undertake learning activities in response to the module learning experience. Where students have completed more than one outcome-led module then this seems to lead to a heightened awareness of the design in subsequent modules. This suggests that the influence of the model might transcend a discrete module and corroborates Svensson and Högfors (1988) findings that raising students' awareness about learning to a conscious level may help to bring about changes in their conceptions. More research is, however, required in order to justify this proposition.

A far more robust conclusion is that the clarity of expectations provided by the outcome-led model reduces student anxiety. This is consistent with Biggs's model of learning in context (1990 b) (see figure 2.14) in which he proposes that students' perceptions of contextualised learning outcomes influence their beliefs about their own capacity to learn which in turn influences the approach adopted and ultimately the outcomes which the student achieves. The findings from this research suggest a more precise influence than that proposed by Biggs; namely that the clarity of direction in learning provided by the outcome-led design reduces students' anxiety about their potential to effect the outcomes and that this shapes how they go about learning in a given context.

It might, however, be suggested that the outcome-led model provides such clear guidelines as to the nature of learning in a module, that it fuels an achieving approach to learning as identified by Entwistle (1988). The data relating to this are equivocal; whilst some students suggest that the model has given them the confidence to pursue tangential learning because they feel secure about the module assessment, others felt that the design closed down and confined their learning to the achievement of the stated outcomes. Further research is necessitated in order to reach a more conclusive appraisal of this proposition.

There are also inconclusive data relating to the potential of self-assessment to encourage students to become more metacognitive about their learning. The findings from the focus group interviews and the in-
depth case studies signal that the process of self-assessment can contribute to clarifying 'the what' of learning in a module by encouraging reflection on the outcomes and assessment tasks and criteria and that therefore it is a tool for fostering appropriate learning activities, 'the how' of learning, in response to the module learning experience. An item relating to self-assessment was included in the first draft of the questionnaire, which provided the basis for the factor analysis, but the number of respondents who had sufficient experience of self-assessment was too low to include in the main study and the item was removed. There is sufficient data to suggest that self-assessment should be given more prominence in the outcome-led model, but more research into how self-assessment informs the process of learning is necessitated before the process can be justifiably advocated as a means of informing and developing metacognitive skills. More cogent conclusions can, however, be made with respect to other design features which shape students' conceptions of learning.

6.4 The design features influencing how students perceive learning in context.

The findings suggest that four features of curriculum design serve to inform how students perceive learning in a modular context.

i. The clarity of module expectations

The construct 'clarity of module expectations' emerged strongly from both the factor analysis and the qualitative data from the focus group and the in-depth interviews. The items which loaded on to this construct (see Table 5.7) and the qualitative data suggest that clarity of expectations about 'the what' of learning is gleaned from:

(a) the module documentation (the module guide, the outcomes, and the reading list);
(b) the module tutor who makes it clear from the start of the module what learning is about;
(c) the close link between the outcomes, the sessions and the assessment.

Both the negative loading on this construct of the item 'I need to ask the lecturer to find out what is expected' and the existence of the construct 'reliance on lecturers and peers' (see table 5.7) affirm that when such information is made transparent, accessible and intelligible to students, then they do not need to rely on either on other students or individual
contact with their module tutor in order to clarify what learning is about.

In all three of the traditional modules analysed the lack of clarity about the module expectations contributed to the low incidence of congruence between the lecturer's and students' conceptions of learning. It has already been proposed that where the module expectations, both in terms of 'the what' and 'the how' of learning are not made transparent to students then their existing beliefs about learning held at the inception of the module, remain unchallenged. This offers an explanation for why providing a clear statement about the 'what' of module expectations is a necessary, but not a sufficient condition for changing students' conceptions of learning. Whilst the module documentation, module tutors and the close link between the outcomes, the sessions and the assessment might be a source of the 'what' of learning, there is little evidence to verify that in either the outcome-led modules or the traditional modules the process of learning is actually informed through these sources.

**ii congruence between learning outcomes, taught sessions and the assessment régime**

The second design feature which was identified was labelled 'congruence'. The factor analysis, corroborated by the qualitative data, links together the taught sessions, the outcomes and the assessment as a discrete influence, suggesting that the design and the implementation must be as one, that there must be congruence on paper and congruence in action if students' perceptions are to be changed. The linkage between the design features is paramount e.g. a clear statement about what learning is in the module alone does not change conceptions it must relate to the outcomes, the experience in the taught sessions, and the assessment. Implicit within the notion of congruence is the assumption that what the tutor expects the students to be learning, the learning outcomes and the demands of the assessment tasks are accordant. The inclusion of assessment in this construct is deemed to be important because the process of assessment informs both 'the what' and 'the how' of learning, whilst both the content of the taught sessions and the outcomes have been shown to be concerned with 'what' is learned. The findings of this study justify the proposition that where there is congruence between the outcomes, the taught sessions and the assessment
students are more likely to hold the same conception of learning as their tutor than in modules where there is dissonance between the three elements.

iii Learning activities
A third influence on students' perceptions of learning, labelled 'learning activities', was highlighted by the factor analysis and confirmed by the focus group and in-depth interviews. The importance of learner action was emphasised by module tutors who considered that awareness of module expectations alone would not bring about a change in conceptions of learning; students need to act on this information. This gives further support to the hypothesis that clarity of module expectations is a necessary but not a sufficient condition for changing students' conceptions.

Learning activities relate unequivocally to 'the how' of learning, to the connectedness between the action that students undertake in relation to the module outcomes and in response to (a) the taught sessions; (b) the directed learning (learning which takes place outside of the taught sessions and which is related to the achievement of the outcomes); (c) the assessment régime. These elements, identified through the factor analysis, comprise what might be termed the domains of the learning experience of a module. Whilst the research questions did not seek a definition of a learning experience, the identification of these three domains in which learning activities take place represents a contribution to curriculum theory and offers a clear articulation of the contexts which the curriculum designer in higher education should address if he/she is to bring about changes in their students' conceptions of learning. It also challenges traditional design models which have honed on the teaching context as the object of design and which have failed to consider either the assessment régime or students' directed learning as part of their design remit. The guided study time in the outcome-led models is consistently cited by students as a focal point for the kind of learning activities which affords them an experience which is shared by their peers and which thereby becomes a source of common ground for their seminar sessions. Within the context of mass higher education outlined in chapter 1, this adds further weight to the suggestion that the designing of directed learning is worthy of consideration by curriculum
planners if the learning opportunities for undergraduate students are to be maximised.

The findings, particularly those from the analysis of the in-depth case studies (see 5.7.3), suggest that students who do not undertake learning activities in each of these domains of the learning experience are unlikely to change their conception of learning because a high level of learning activities relating to the module outcomes is a necessary condition for changing students' conceptions of learning.

The learning outcome-led model offers a tighter framework and guidelines for fostering such activities, than the traditional design, but there is evidence, particularly from the in-depth studies, that some students still fail to make appropriate inferences from the generic academic outcomes, the taught sessions, the assessment régime and the directed learning activities about the nature of 'the how' (the process) of learning. It seems that the very firm beliefs that these students hold at presage about 'the what' of learning being an accumulation of information acts as a block which precludes them from appreciating that 'the how' of learning might entail more than acquiring facts. Those students who do infer from the domains of learning the ways in which the lecturer perceives 'the how' of learning, then undertake, as a consequence of this perception, the kind of learner action which is conducive to the achievement of the outcomes which have been stated. This is consistent with the theoretical framework of this thesis which proposes that a student's conception of learning determines the approach he/she adopts and ultimately the outcome achieved (see Figure 2.12 and 2.4.4).

The implication of this is that there needs to be more of a concerted effort in each of the three domains of learning to challenge students' preconceived beliefs about what constitutes appropriate action in terms of 'the how' of learning. Such a modification entails giving a greater prominence to metacognitive skills by raising their importance to a higher level of consciousness in terms of both learner and teacher action. This represents a new departure for curriculum design in HE.
Teaching context

The fourth design feature which influences how students perceive learning is that labelled the 'teaching context' which encompasses the taught sessions and the seminars. Implicit within this context is the linkage between the taught sessions, the outcomes and the assessment which has also been highlighted through the constructs 'congruence' and 'learning activities'. Thus the teaching context is not deemed to be influential in isolation from either the assessment régime or directed learning and as such it is a part of the whole learning experience and it is therefore not held to be sufficient in itself to bring about a change in conception of learning. But the emergence of a cluster of items relating discretely to the taught sessions (Table 5.7) does reaffirm the importance of teacher/student interaction which is consistent with the models of learning in context proposed by Ramsden (1988); Biggs (1990b) and Prosser (1995).

The theoretical underpinning of this thesis is premised on the relational view of learning (see 2.4.5) which posits that what is learned and how it is learned are two inseparable aspects of learning (Marton, 1988, p. 53). The findings of this study corroborate Marton’s theory and suggest that curriculum designers need to take cognisance of both 'the what' and 'the how' of learning if they are to bring about changes in the way in which their students perceive learning in context. None of the design features which have been identified is sufficient alone to shape students' conceptions of learning in a given module. Clarity of module expectations and the teaching context both predominantly address 'the what' of learning, whilst the learning activities are concerned with 'the how', although congruence provides the link between the teaching context and learning activities and thus focuses on both 'the what' and 'the how' of learning, there are inadequate data to propose that a model of design based solely on creating congruence would suffice to bring about a change in students' conceptions. What is required is a design model in which the teaching and learning experience is conceived holistically incorporating each of these features.
6.5 Models revisited

6.5.1 The learning outcome-led model

Allan's model of curriculum design posited in Figure 2.6 requires modification in the light of the findings of this research. The learning outcomes remain at the apex of the model because they are the starting point for the design (Figure 6.1). The three domains constituting the learning experience which have emerged from the study namely; the teaching context; directed learning and the assessment régime are incorporated into the model. (It is acknowledged that the teaching context may be replaced wholly or in part by a placement). The inclusion of directed learning as a discrete domain of learning reflects the findings of this thesis which have shown that how students perceive learner action shapes their conception of learning and ultimately the approach they undertake. The model emphasises that appropriate learner action is that which is congruent with the outcomes of the module.

The outcomes determine 'the what' and 'the how' of each of the three domains of the learning experience and consequently they are the anchor for assuring that the learning experiences across domains are congruent. An additional box has been added (Figure 6.1) to give greater prominence to the expression of clarity of expectations in terms of both of 'the what' and 'the how' of learning. The earlier model made two erroneous assumptions (i) that clarity could be achieved solely through the outcomes and (ii) that 'the what' of learning was more influential in determining students' conceptions of learning than 'the how'. Whilst the generic academic outcomes are strong indicators of the process of learning which the lecturer has in mind, these were not given a sufficiently high profile either in the design model or in the implementation. The inclusion of 'the how' of learning in the model reflects the salience which the research suggests should be given to metacognitive skills and prompts the designer to consider the process of learning in respect to each domain of the learning experience in relation to the stated outcomes.
Figure 6.1 Designing Learning Outcome-Led Curricula

proffessional bodies \arrow{->} academics \arrow{<->} employers

learning outcomes: subject specific, personal & generic

clarity of expectations of the 'what' & the 'how' of learning: outcomes; documentation; module tutor; congruence.

Teaching context: taught sessions; seminar sessions; content; learning activities.

Students' conception of learning

Assessment régime: tasks; criteria.

Directed learning: learning activities related to the outcomes, teaching context and assessment régime.

Notes:

i. the teaching context, directed time and assessment régime constitute the learning experience;

ii the assessment régime, the taught sessions and the activities promoted in directed learning are all congruent with the learning outcomes;

iii only outcomes which are assessed are stated.;

iv 'documentation' refers to information given to students about the assessment régime, activities in directed time, and the teaching context;

v module evaluation by students and lecturers feeds back into the outcomes and therefore the whole learning experience;

vi the teaching context may be replaced in part, or wholly, by a student placement which would then become the focus of this domain of learning.
6.5.2 Models of learning in context

Ramsden's (1988) model (Figure 2.13) and Prosser's (1995) model (2.15) and Biggs's (1990 b) model (Figure 2.14) differ noticeably with respect to perceptions of learning. Biggs includes conceptions of learning within student characteristics, whilst Prosser places them in an analogous box referring to the presage factors of students' prior experience and orientation, but Ramsden and Prosser both accord them a higher profile by placing conceptions in a discrete box leading from the presage factors (an additional reference to perceptions in Prosser's model) to the approach to learning. Biggs's model can be thus be said to fail to reflect the inextricable link between students' perception of learning and the approach they adopt which has been established by current research (see 2.4.4). The findings of this study indicate that the way in which students perceive learning can be changed as a result of the experience they encounter and that therefore they are module-dependent rather than being a fixed attribute. This calls into question the positioning of conceptions of learning with student characteristics which suggests that conceptions of learning more properly derive from, and are dependent upon, a student's prior experience than from the learning context. There is, however, evidence in this thesis that the conception that a student holds at presage shapes the way in which he/she perceives learning in a new situation. This has been shown to be especially pertinent when a very strongly held belief about learning acts as a barrier to the assimilation and internalisation of a different perception of learning. Both Biggs and Prosser acknowledge this by featuring perceptions of learning as a factor at presage, whilst Ramsden's model is somewhat vague in relation to the influence of preconceptions. The findings of this thesis suggest that perceptions of learning should feature twice in a model of student learning: first as a presage factor; then in a discrete box leading into the process, the approach to learning - thus endorsing Prosser's (1995) model (see figure 2.15).

It was, however, the teaching/learning context - the shaded boxes in the three models of learning in context - which this study sought to exemplify. Both Ramsden (1992) and Biggs (1990 b) refer specifically to the influence of the teaching context in shaping a student's perception whereas Prosser (1995) refers to what might be termed the

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teaching context - course and departmental learning - but he labels it the learning context; the latter seems more appropriate in a model of student learning. The findings of this study point to three domains of learning experience which shape students' perceptions: the teaching context; assessment régime and directed learning. The teaching context and assessment are both acknowledged as being influential in both Biggs's and Ramsden's models, Prosser's model remaining imprecise with regards to assessment, but none of the three models of learning attests the effect of directed learning, that is learning which takes place outside of the taught sessions related to the achievement of the outcomes.

This research has also demonstrated the effect that the congruence of a learning experience - the connectedness between the learning outcomes, the taught sessions, the assessment régime and directed learning - can have on the way students perceive learning; this is not represented in any of the models of learning analysed. The third dimension, relates to the holistic approach to teaching and learning which is a salient characteristic of the relational view of learning and which proposes that 'the what' and 'the how' are two inseparable aspects of learning (Marton, 1988). The data in this study affirm this theoretical stance and build on it by suggesting that students are influenced by the clarity in which expectations relating to both of these dimensions of conceptions of learning are articulated and fostered within the learning experience and that both clarity of expectations and metacognitive activities should be added to the specific influences on students' perceptions of learning from within the learning experience. The proposed modifications to the learning experience based on the conclusions of this thesis are summarised in Figure 6.2.
One further finding of this study which may be related to the models of learning in context arises specifically from the outcome-led model in which the clarity of expectations about what learning is in a given module emanates from the learning outcomes which are crucial in shaping the learning experience. The corollary of this is that the outcomes are both the starting point and the end product of the learning experience. Only Biggs recognises the influence of the outcomes in shaping students' perceptions; he includes a backward arrow from the outcomes to student characteristics (Figure 2.14) which he labels 'efficacy beliefs re learning'. This research confirms that students are influenced by an increase in confidence resulting from their knowledge of what the outcomes comprise and by their ability to achieve them. It also shows that the effect of the outcomes can be extended to shaping the manner in which students perceive 'the what' and, particularly through the generic academic outcomes, 'the how' of learning.

6.6 Recommendations.

The modified learning -outcome-led model should be more widely introduced at both undergraduate and post graduate levels, further research should be undertaken to discern whether students studying a number of outcome-led modules are more likely to change their conceptions of learning than those who take a single outcome-led module;
ii metacognitive skills, commonly encompassed in the term 'taking responsibility for one's own learning', represent high level learning activities which cannot be assumed to exist as part of an undergraduate's repertoire of learning strategies. If these skills are to be fostered then module design needs to include opportunities for their guided development in each of the three domains of the learning experience which have been identified. Lecturers should give a higher profile to metacognitive knowledge in their taught sessions whilst simultaneously developing teaching strategies and creating learning opportunities to enhance these skills both in directed time and through the process of assessment. This might well result in lecturers reconfiguring their contact time to incorporate a greater concentration on the processes of learning and on learner action and interaction at the expense of passing on factual information which students might well acquire in directed time. The outcome-led model provides the scaffold for the enrichment of metacognitive knowledge, but some students are resistant to it especially at level 1 of undergraduate study where module and portfolio designers need to address how and where students can be encouraged to become more metacognitive about their learning. A more concerted and orchestrated strategy for making learner action more of a focal point of the learning experience is necessitated if the strong beliefs held at presage by some students are to be counteracted. Further research into the effects on student learning resulting from a greater emphasis on learning action should be undertaken;

ii self-assessment should be given a higher profile as a metacognitive skill. This can be facilitated by including self-assessment in the assessment régime of each module and by implementing strategies to develop the skills through each domain of the learning experience, but further research into the capacity of self-assessment to inform and develop these skills should be undertaken;

iii more prominence should be given to the articulation of, and reference to, generic academic outcomes in the implementation of the outcome-led model. These outcomes are important indicators of the how of learning and therefore should be given greater emphasis in the module documentation, the taught sessions and in relation to the
learning activities which students undertake in both the taught sessions and directed learning time;

iv lecturers should be required to give some direction to students' learning activities outside taught sessions especially where it is feasible to provide students with a shared experience which can then become a focal point for learning activities within the taught sessions;

v further research should be undertaken to discern the effect of raising students' awareness about learning which these recommendations address;

vi further research should be carried out to investigate the extent to which the outcome-led model may be said to confine learning to the achievement of the prestated outcomes.

6. 7 Concluding comment
The findings of this thesis suggest that the introduction of a learning outcome-led model into institutions of mass higher education demands the reappraisal of the responsibilities of both the lecturer and the student in the process of learning. This implies a reconsideration by students and lecturers of how contact and non-contact time is used in order to maximise the potential for learning particularly within the context of dwindling resources. The onus is on the lecturer to design the 'what' and the 'how' of the learning experience of a module holistically, reconceptualising the teaching context in the light of the learning that it is envisaged will take place in the other two domains. For his/her part, the learner also needs to appreciate the modular experience as a whole and accept that it is his/her responsibility to address the outcomes of a module through directed time, and independent learning, thereby complimenting and supplementing the teacher directed activities within the taught sessions. The learning outcome-led model is thus a design for learning: the learner is the focal point and the learning experience is pivotal.

It might well be that as 'the what' of learning is more readily addressed through the application of information technology to HE, the contact time between lecturer and student will focus more on 'the how' of
learning through the fostering of metacognitive strategies and appropriate learner activities during students' directed learning. The outcome-led model provides the starting point for such innovation, wherein lies the challenge for the designer of the HE curriculum for the late 1990s and beyond.
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Appendix 1 Generic Academic Outcomes

1. Make use of information:
Criteria:
level 1  * supplement notes with appropriate reading;
          * reference correctly;
level 2  * select and use relevant references and quotation to
          support the points you are making;
level 3  * use specialist texts and journals to substantiate your
          arguments;
          * draw together material from a variety of sources into a
          coherent argument.

2. Analyse
Criteria:
level 1  * identify ideas, concepts and principles that underpin
          theories in your subjects;
level 2  * explain the relationship between different elements of a
          theory;
          * distinguish between evidence and argument and
          hypothesis;
          * evaluate ideas and concepts;
level 3  * recognise the difference between assertion and argument;
          * recognise and acknowledge inconsistencies in arguments.

3. Think critically
Criteria:
level 1  * examine problems from a number of perspectives;
level 2  * question and challenge viewpoints, ideas and concepts;
          * make judgments about the value of evidence, concepts
          and ideas;
level 3  * develop and be able to justify your own opinions on
          significant ideas and concepts in your own subject.

4. Synthesise ideas and information
criteria:
level 2  * relate new ideas and concepts to previous ones;
level 3  * relate theoretical ideas to practical tasks;
          * integrate learning from different modules you have
          studied;
          * organise and structure ideas, concepts and theories into a
          coherent whole.

Appendix 2 Key Transferable Skills

The ability to:

1. Communicate effectively:
   i. Writing skills: write accurately and effectively in a variety of structured formats (e.g. essay, reports, instructions), and demonstrate the appropriate conventions in each. Recognise different audiences and demonstrate use of appropriate writing styles, and relate these to appropriate audiences.
   ii. Oral presentation skills: give present material in a variety of structured formats (e.g. formal presentations, formal and informal explanations, instructions). Recognise different audiences and make use appropriate styles, including interactive responses.

2. Organise
   Identify and use existing resources effectively; develop flexibility in approaches to the management of work in hand. Recognise task demands and manage time effectively. Monitor, review and reflect upon self-management.

3. Gather Information
   Gather information (archival and library material, data, statistics) and develop effective storage and retrieval systems. Interpret, analyse and synthesise material in a variety of forms (statistical or textual data, in an appropriate context).

4. Use Information Technology
   Create, store, send and retrieve data in a variety of forms (word-processing, Email, databases, spreadsheets, graphics). Make effective use of information from a variety of sources e.g. CD-ROM, JANet, Internet.

5. Act Independently
   Develop autonomy, initiative, self-motivation and resourcefulness; demonstrate decision-making and problem-solving skills. Assess progress, and monitor, review and reflect upon own performance and achievements.

6. Work in Teams
   Work co-operatively in groups, share decision-making and negotiate with others. Awareness and ability to adopt a variety of roles. Listen to relevant opinions before reaching decisions and relate the ideas of others to the task in hand. Evaluate the strengths and weaknesses of group effectiveness and of own performance within it.

7. Numeracy
   Process numerical information related to real-life problems and interpret the outcomes. Develop sufficient symbolic and vocabulary skills to express and interpret a variety of coded statements.

It is important to remember that self-assessment should be incorporated into all of the above, in order that students can:
   identify learning processes and gains made;
   develop self-knowledge and the ability to reflect upon effectiveness;
   record, monitor and review progress;
   make decisions about further development of skills.

Appendix 3 Assessment Criteria

Level 2
A16  A15  A14
Shows a sound ability to inter-relate concepts & ideas, to relate theory to practical examples critically. Makes points clearly & precisely & always uses appropriate references to substantiate points, evidence of wide reading. Coherent, some evidence of independent thought.

B13  B12  B11
Shows an emerging ability to apply knowledge critically, to inter-relate concepts & ideas, & to relate theory to practical examples. Appropriate evidence is mainly used to substantiate points. Content is wholly relevant, & links made between all paragraphs.

C10  C9  C8
The student demonstrates a sound knowledge and understanding of the issues involved, but a limited ability to apply knowledge, concepts & ideas critically. Content is mainly relevant, points are not always clearly made, & there are some lapses in coherence. Some evidence of citation to substantiate points. Some analysis, but poor structure - eg. lacking coherence or grammar and spelling unsound.

D7  D6  D5
A tendency to be descriptive, but some evidence of critical analysis albeit limited. The student demonstrates a reasonable knowledge and understanding of the issues involved. Maximum of D7 if the work contains sweeping unjustified statements.

E4  E3
Limited evidence of appropriate reading, work is totally lacking in critical thought. Descriptive & possibly lacking a bibliography.

Level 3
A16  A15  A14
Evidence of extensive research/ investigation & critical evaluation using a wide range of appropriate criteria, & sources. The student inter-relates and synthesises concepts & theories with clear evidence of independent thought and/or originality. Very well written.

B13  B12  B11
Demonstrate an ability to analyse, synthesise & to evaluate making balanced judgments. Relates theory to practical examples critically. Arguments are well-structured, appropriate evidence is always used to substantiate points, links are made between all paragraphs. Some form of independent judgement has been attempted.

C10  C9  C8
Some ability to analyse critically & to synthesise concepts, theories & practical examples. Evidence of attempts to structure arguments which are mainly supported with appropriate citation. Content is wholly relevant, & links made between most paragraphs. Grammar & spelling sound.

D7  D6  D5
Knowledge & understanding of the issues but limited ability to think critically & difficulty in balancing & substantiating points. Evidence of adequate reading, [specialist texts/research papers where this is appropriate] some use of citation to substantiate points. Limited evidence of inter-relating concepts/ theories/practical examples. Mainly relevant & coherent - D5 if poor structure, grammar or no evidence of linking ideas or paragraphs.

E4  E3
Limited evidence of appropriate reading & inadequate use of evidence to substantiate points. Mainly descriptive, lacks analysis, & coherence. Possibly sweeping statements, poor grammar.
Appendix 4 Implementing the Outcome-led Module

Designing modules in learning outcome form using the model involves:

i expressing the outcomes of the module in terms of subject-specific outcomes, generic academic outcomes and personal transferable skills;

ii providing information on the scope and context of these outcomes;

iii grouping the learning outcomes into components for the purpose of assessment;

iv linking assessment tasks to the learning outcomes;

v providing a clear summary of the outcomes, assessment tasks and weighting for each module;

vi linking outcomes to weekly sessions—where a module is taught—;

vii linking directed time to the outcome statements;

viii providing specific criteria for the assessment of each task within a module;

ix providing generic assessment criteria for the subject within which the module is located.

(Allan, 1995 b)
Appendix 5 A taxonomy of conceptions of learning
(Based on Marton et al 1992)

A. An increase of knowledge
A vague quantitative conception of learning as ‘knowing a lot,’ knowing more

WHAT
Referential (meaning) aspect
Increasing knowledge, gaining more pieces of knowledge - quantitative flavour

Structural aspect
External horizon - person’s life world, no differentiation between learning and life in general.
Internal horizon - learner having a certain amount of knowledge at a certain point in time and a larger amount at another point.

HOW
Referential (meaning) aspect
“consumption metaphor” picking up bits of knowledge, absorbing knowledge.

Structural aspect
External horizon - As with the what aspect the ‘how’ aspect is not discriminated from the life-world.- person’s life world, no differentiation between learning and life in general.
Internal horizon - 3 component factors: the learner, the act (filling the head) and the object (pieces of knowledge)

The indicators
Quantitative, discrete character of knowledge (information), the collection, consumption and storing of ready-made pieces of knowledge/information Marton et al, (1992, p. 285). Learning not dealt with from the point of view of using what has been learned.

Pole
Focus on the first pole of acquiring learning is not dealt with from the point of view of using what has been learned.

Descriptors
Raising awareness, broader view of...
Knowledge - related to a student’s ability to store information in his/her mind and recall it later in substantially the same form. This may include knowledge of terms, facts, rules and principles.
Learning as memorising and reproducing

Differentiation through the external horizon, learning is oriented towards control/assessment.

**WHAT**

Referential (meaning) aspect

That learning is to memorise and be able to reproduce something. Reproduction is an indication of this conception, learning means becoming capable of doing something namely reproducing the material.

Structural aspect

*External horizon* is that learning is confined to specific occasions - e.g. tests, or examinations. Learning is entirely related to some educational control or assessment. Marton et al, (1992, p. 286) Expected reproduction.

*Internal horizon* characterised by the component parts: the learner at a certain time not being able to reproduce the material and the learner at another point in time capable of reproducing the material.

**HOW**

Referential (meaning) aspect - storing facts (much the same as conception A), BUT there is another conceptualisation of the how aspect - you learn by repetition.

Structural aspect

*External horizon* is that learning is confined to specific occasions - e.g. tests, assignments, examinations of learning is entirely related to some educational control or assessment. Marton et al, (1992, p. 286) External horizon the same for the what and the how aspect.

*Internal horizon* - can be as conception A - 3 component factors: the learner, the act (filling the head) and the object (pieces of knowledge), or it can be learning through repetition - there is a learner and repeated acts of learning.

**Indicators**

Drumming it in and reeling it off, repeating it, learning it for assessment, notion of 'correct knowledge'. The structural aspect is the distinguishing feature.

**Pole**

Both poles of acquiring-using are identified.
C Learning as applying

WHAT
Referential (meaning) aspect
"What is learned is conceptualised here as the ability to apply some knowledge or procedure" Marton et al. (1992, p. 287)

Structural aspect

External horizon - person's life world, one applies what is learned when the need arises.
Internal horizon - component parts are the learner, the situation and that which is to be applied.

HOW
Referential (meaning) aspect
"consumption view" learners is taking in and storing information. Acquisition of facts etc. to be dawning realisation that learning may be retained and/or utilised in practice involve more than memorising facts, recognition that knowledge and skills can be useful on the real world.

Structural aspect

External horizon - person’s life world
Internal horizon - the facts procedures etc. stored and retrieved, the learner and the situation in which the facts procedures etc. are applied.

Indicators
Application, able to put information to use, turning it around and make use of it in other ways.

Pole
Conception C forms a pair with A; this is the application pole. Emphasis on application. Learning and application are embedded in the learner's life-world (as for conception A). Differentiated from conception A in that C involves application and from B that the application is for more than just reproduction for a test situation. In A, B and C learning is seen as ready-made - waiting to be acquired and stored.

Conception B differs from conception A with regard to its external horizon, while learning is part of the individual's life-world in conceptions A and C it is restricted to the institutional context in conception B. Acquisition and application (reproduction for a test) are more closely related in B. C can be distinguished from A through the emphasis on application and from B through the emphasis on institutional context.
Learning as understanding

"There is an important dividing line between conceptions A, B, C on the one hand and conceptions D, E, F on the other hand. The watershed is meaning." Marton et al (1992, p. 288). Meaning is central to the last three conceptions.

**WHAT**

Referential (meaning) aspect

Abstraction of meaning recognises that learning involves insights into relationships within subject matter and between subject matter and reality, gaining meaning. The nature of what is learned is changed - the meaning is abstracted. The what aspect is conceptualised as gaining meaning, or understanding - grasping new ideas, seeing things in a different light, gaining insight, getting to know the subject. Subjects talk about grasping the meaning of something - Marton et al suggest that they have the same phenomenon in mind as they have when they talk about "developing a conception of something". Marton et al (1992, p. 288) Idea of conception appears within 3 of the 6 conceptions of learning. Subtle difference between "looking into the learning material" and having a view of things.

**Structural aspect**

*External horizon* learning as in conception B is confined to a study situation, although not primarily a test situation. "The delimitation to the study situation, the external horizon of learning, is in fact the feature that distinguishes the present conception from the next one [E] most clearly". Marton et al (1992, p. 289)

*Internal horizon* the learner developing, (grasping, discovering,) some meaning in, or from, the learning material that has not been previously developed.

**HOW**

Referential (meaning) aspect

May be the object of learning which is focused on - this is what gets 'tossed around' - may be on the act of the learner (how the looking is done).

Marton et al (1992, p. 289) found some differences in centering - e.g. directedness in the act of learning which goes from the learner into the learning material - primary centre is the learner. The learner considers the various component parts in the material and (often critically) examining their relationships. May be reverse directedness from the meaning found in the material to other ideas e.g. take the principles and apply them to other ideas or principles.
'looking into' - "the whole is given to begin with and the parts are discerned subsequently." Marton et al, (1992, p. 291)

**Structural aspect**

*External horizon*  learning as in conception B is confined to a study situation, although not primarily a test situation.

*Internal horizon*  when the learner is 'looking into' the learning material then the component parts seem to be the learner, the parts in the material. other ideas or events to which the material can be related, the learner's act of discerning. Where the object of learning is seen from the outside (from different perspectives) the component parts are the learner, the object of learning, the act of viewing and the views themselves. [the referential and structural aspects are inseparable.]

**Indicators**

Becoming critical, weighing other people's views, finding out for oneself, looking at subject matter in more depth, relating ideas to other ideas or principles, getting to know different views, looking at something from a different view. Seeing things in a certain way. [visual metaphors dominate]. Grasping understanding an idea.

**Analysis** - related to the ability to breakdown a communication into its constituent elements or parts, such that the ideas are made clear, and the relations between elements are made explicit. This may include the ability to recognise unstated assumptions, distinguishing facts from hypotheses, and comprehending the interrelationships among ideas.

D and E are related by forming an acquisition-application pair. "in both cases there is something that is understood or seen in a certain way.' In D this something is the learning material or the object of study and in E it is the phenomenon in the world around us.
E  Learning as seeing something in a different way

WHAT

Referential (meaning) aspect
"In this conception the referential (meaning) aspect of what is learned is very similar to the referential aspect of the what of learning in the previous conception." in both cases the learner sees something in a different way. In conception E it is the change that is emphasised "the learner is changing his or her way of thinking about something, changing their conception of something." Marton et al , (1992, p. 290). Suggestion that learning should help you to interpret reality.
An interpretative process aimed at learning seen as a means of understanding the understanding of reality the world around us by reinterpreting knowledge
"Looking at’ dominates. “Emphasis on the way things are seen from different perspectives; things already discerned are seen as being related to other things or parts of greater wholes.” Marton et al , (1992, p. 290)

Structural aspect
External horizon  - learning is located in the world beyond the study situation.

Internal horizon  - the component parts are the learner, alternative perspectives or viewing points, phenomena in the world, relations between them and whole which phenomena are a part of.

HOW

Referential (meaning) aspect
Rare - learners look at things in a new way when they have more knowledge of them or the learner sees things in a new way by applying techniques of structuring to new situations.

Structural aspect
External horizon  - learning is located in the world beyond the study situation.

Internal horizons  - Either the study situation, the learner, the learning material containing the facts and the process of the learner’s acquisition, or the learning situation, the learner, the learning material, and the application situation. Marton et al , (1992, p. 292)

Indicators  (Marton et al 1992)

personal view, broadening outlook on the world, opening your mind, a different view of the world, looking at things from all sides, taking the view of the environment as a whole unit.

Pole
“Conceptions D and E form a pair in which the former relates to the acquisition phase and the latter to the application phase, as with conceptions A and C.” Marton et al , (1992, p. 291)
Learning as changing as a person

WHAT

Referential (meaning) aspect
Self-actualisation learning as personal growth and development. Only found by Marton et al, (1992,) in a very few cases. Builds on C and D and adding an existential aspect to learning. Hierarchically related to conceptions D and E as it builds further on them. Transition from having been the object of events (things happen to me) to becoming the agent of events. Marton et al, (1992, p. 298)

Structural aspect

External horizon
Learning is not delimited from the person’s life worlds (similar to conceptions A and C) or from the person (this is a difference from conceptions A and C).

Internal horizon: the component parts are the learner, the learning material, the meaning of the learning material, phenomena in the world around us and their meanings for the learner.

HOW

Referential (meaning) aspect
(1) Emphasises changing as a person - seeing things differently changes a person, or it means you have changed. (2) emphasises the continuous nature of change, (3) The ‘way of seeing’ is what is learned - “it is a more generalised skill, a capability” Marton et al, (1992, p. 293) Acquiring the capability changes one’s perception of oneself: one sees oneself as a more capable person”. Marton et al (1992, p. 293) making things happen, rather than being an object of what is happening.

Structural aspect

External horizon - Life-world

Internal horizon - correspond to the 3 referential aspects of how.

Indicators
its something continuous, expanding yourself, taking hold of life and making it go your way. [organic nature of metaphors - growth, branching]
Appendix 6 Research Methods Module

Title: Research Methods For Education and Social Sciences

School: Education  Module Leader: J. Allan  Level: 2  Credit Value: 15  Duration: One semester

Subject Board: Education Studies  External Examiner: Christine Eden

Academic Year Module First Available: 1992/93

Parent & other Course(s)/Programme(s): MODDS

Prerequisites:
Students must have successfully completed 4 x15 credit level 2 modules within the modular degree programme.

Corequisites:
None.

On completion of this module participants should be able to:

Learning Outcome  Range Statement  Assessment
1. Make a clear statement of a research issue and appropriate research questions  Small-scale case study research.  essay, self-assessment
2. Select and justify a research approach, appropriate for a specific research issue.  Scientific, Interpretive and Action Research paradigms.  essay, self-assessment
3. Select and justify an appropriate methodology and data collection instruments, for a specific research issue.  Interviews, questionnaires, observation.  essay, self-assessment
<table>
<thead>
<tr>
<th>Step</th>
<th>Activity Description</th>
<th>Output Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Identify the major sources of literature relevant to a given research issue</td>
<td>Publications from Britain and USA, 1985 onwards.</td>
</tr>
<tr>
<td>5.</td>
<td>Apply knowledge of validity, triangulation &amp; research ethics to a given research issue</td>
<td>small-scale case study</td>
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<tr>
<td>6.</td>
<td>Write, pilot, use and evaluate data collection instruments</td>
<td>interviews, questionnaires, observation</td>
</tr>
<tr>
<td>7.</td>
<td>Analyse and present data</td>
<td>small-scale, data from interviews, questionnaires and observation</td>
</tr>
<tr>
<td>8.</td>
<td>Presentation outcomes</td>
<td>whole group involvement</td>
</tr>
<tr>
<td>10.</td>
<td>Working in groups outcomes</td>
<td>seminar work &amp; group preparation</td>
</tr>
<tr>
<td>11.</td>
<td>Academic outcomes</td>
<td>discussion in groups &amp; seminars, assignments</td>
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**Brief Description for Module Catalogue:**
The module has been designed to introduce students to the principles of research in education and the social sciences and to facilitate the development of appropriate skills so that they may undertake confidently their level three project. It is not confined to education students and should be relevant and valuable for all humanities and social science students.
Teaching/learning methods
The weekly sessions will comprise lecturer input, videos, seminar discussion on set readings, selection of appropriate reading, student presentations, group work on specific tasks and tutorials. Students will be given a breakdown of weekly sessions together will specific preparation for each session. this does not preclude the development of the students personal responsibility for their own learning.

Student directed learning time: 105 hours  
Contact time: 45 hours

Assessment
The assessment will take the form of a presentation, an essay, self-assessment of essay work and by a log-book. Students will be responsible for monitoring their own progress towards the assessments of learning outcomes by a presentation and an essay and they will be required to submit a log-book and a self-assessment in order to fulfil the assessment requirements of the module. The presentation outcomes, self-assessment and log-book and will be assessed on a pass/fail basis. The content of both the presentation and the essay will be assessed according to the criteria currently in use for Education Studies modules, and will each carry 50% of the module weighting. Students are required to gain a minimum mark of D5 on each assessment component in order to pass the module.

<table>
<thead>
<tr>
<th>Assessment components</th>
<th>Learning Outcomes</th>
<th>Assessment</th>
<th>Assessment weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation</td>
<td>outcomes 6,7,11</td>
<td>Education Studies criteria</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>outcomes 8</td>
<td>Pass/fail</td>
<td></td>
</tr>
<tr>
<td>Essay</td>
<td>outcomes 1, 2, 3, 4, 11</td>
<td>Education Studies criteria</td>
<td>50%</td>
</tr>
<tr>
<td>Self-assessment</td>
<td>outcomes 1, 2, 3, 4, 11</td>
<td>Pass/fail</td>
<td></td>
</tr>
<tr>
<td>Log-book</td>
<td>outcomes 9, 10, 11</td>
<td>Pass/fail</td>
<td></td>
</tr>
</tbody>
</table>

Schedule of assessment: Mid-semester and week 15 of the module.

Site location: Walsall  
Timetabling: Monday pm
Indicative Reading/Learning Resources:
Tall, G (1988) Why Use A Questionnaire? Pastoral Care vol. 6 No.4
Appendix 7 Generic outcomes of higher education

[referred to as personal transferable skills in the learning outcome model (Figure 2.6)]

Common learning outcomes from employers’ perspective comprise the ability to:
access and select information;
synthesise and interpret information;
demonstrates self discipline (e.g. in managing time);
manage personal stress;
communicate clearly and accurately;
work co-operatively;
work alone;
accept criticism;
understand own strengths and weaknesses;
act ethically;
possess basic computer skills.

(Based on research from employers representing: The Rover Group, Tioxide UK, W.H. Smith, GEC, Alsthorm, DEC Limited and the Association of Graduate Recruiters, Otter (1992 p. 34/35)
Appendix 8 Approaches to Learning

Research shows that study processes used by a student during learning will be related to both the quality and the quantity of learning that takes place.

**Deep approaches: Intention to understand.**
- Focus on what is signified - argument, concepts not just facts;
- Relate and distinguish previous knowledge and new knowledge;
- Relate knowledge from different modules;
- Relate theoretical ideas to practice, concepts to everyday experience;
- Relate and distinguish evidence and argument;
- Organise and structure content into a coherent whole.

*Internal* emphasis: "A window through which aspects of reality become visible, and more intelligible." (Entwistle and Marton, 1984)

**Surface approaches: Intention only to complete the task**
- Focus on the 'signs' - e.g. on the words and sentences of a text unthinkingly
- Focus on unrelated parts of the task;
- Memorise information for assessment;
- Associates facts and concepts unreflectingly;
- Fail to distinguish principles from examples;
- Treat assessment as an external imposition.

*External* emphasis: Demands of assessment, knowledge cut off from every day reality.

[Adapted from Ramsden, P. (1992) ]
Appendix 9 Strategies for Improving Student Learning

(a) Ramsden (1990 p. 27-28)
* wanting to share your love of the subject
* making the material stimulating
* working at the students' level
* using clear explanations
* making it clear what has to be done and why
* showing concern and respect for students
  Implies being available to students.
* encouraging student independence
* Using teaching methods that require students to learn actively and co-operatively
  Methods that demand student activity, problem solving and co-operative learning - yet never allows a particular method to dominate.

* appropriate assessment
  Giving high quality feedback, demanding evidence of understanding, using a variety of techniques to discover what has been learned, avoiding assessment which requires rote-learning or reproducing detail.

* learning from students about the effects of teaching
  Understanding teaching as the facilitation of learning. Constantly trying top find out what the effects of instruction are on learning

(b) Gibbs, (1992b, p.12-18)
* Strategies for Improving the Quality of Learning by
  Adopting a Deep Approach:
  Independent learning
  Greater autonomy and control over choice of subject matter, learning methods, pace of study and assessment of learning outcomes.

* Personal development
  Emphasises motivational context, especially personal involvement in learning.
This involves creating a learning climate which is safe and supportive, facilitating learners in taking responsibility for their own learning, an emphasis on the expression of one's feelings and more sensitive response to the feelings of others.

**Problem-based learning**
Involves learning through tackling problems - distinct from learning to solve problems. The aim to learn rather than necessarily to solve the problem.

**Reflection**
Reflection on the process and content with an aim to helping students to take responsibility for their own learning.

**Independent group work**
This focuses mainly on interaction between students and covers a range of learning activity.

**Learning by doing**
Emphasises learner activity and experiential learning. Used alongside other strategies e.g. problem-based learning, independent learning and reflection.

**Developing learning skills**
The development of study skills does not necessarily lead to a deep approach to learning. "However, it is possible to develop learning skills in the context of developing a sense of purpose, an awareness of task demands and flexibility in adapting to different demands." (Gibbs, 1992 b p. 15)

**Project work**
It almost always involves the application of prior knowledge and it emphasises the role of a sound knowledge base.

(c) O'Neil (1995, p. 118 -123)

**Eight Principles for Enhancing High Quality learning in HE:**

**Enhancing student capabilities and work-related skills**
*encouraging learners to be self-reliant and to develop independent modes of thinking,*
*developing students personal qualities - specialist knowledge as well as transferable skills, intellectual capabilities (abilities to analyse and evaluate issues and problems)*
* enabling learning how to learn to occur, developing study and information processing skills, raising awareness for the effective management of time and people.

**Using student experience as a learning resource**
* encouraging opportunities for experiential learning;
* establishing learning contexts where learners feel that full recognition is given to setting objectives that match their own purposes, needs and levels of prior achievement;
* ensuring that learning tasks and activities are relevant to learners’ personal and professional development.

**Encouraging active and co-operative learning**
* providing a supportive and co-operative learning environment;
* making sure that learners are active during learning sessions.

**Promote responsibility in learning**
* create an environment that enables individuals to participate in the learning process;
* providing curricula that are flexible and enable learners to make meaningful choices.

**Engaging with feelings, values and motives as well as intellectual development**
learning experiences which involve the whole person - conveying enthusiasm, joint endeavour, encouraging risk taking, and minimalising anxiety about errors.

**Fostering open, flexible, reflective and outcomes-based assessment**
Teachers should provide a variety of assessments of students’ learning through self, peer and teacher assessment where the criteria are made explicit following negotiations with course members. “In course documentation teachers should emphasise what students will know, understand be able to do at the end of a sequence of teaching.” (Nightingale and O’Neil, 1994, p. 84) Teaching methods should be directed towards attainment of these outcomes (Nightingale and O’Neil, 1994; Entwistle, 1992; Otter, 1992). In addition the assessment strategies “should be congruent with clearly defined outcomes” Nightingale and O’Neil, 1994, p. 84)

**Evaluating teaching and learning**
* develop student skills in feedback, encourage a customer satisfaction culture
Engage in reflective professional practice. "Teachers should design assessment tasks in was to ensure that they are able to determine whether students have actually achieved the objectives of the subject." (Nightingale and O'Neil, 1994, p. 85)
Systematic approach to module evaluation, develop student skills in giving feedback.

Note:
'Engaging with feelings, values and motives as well as intellectual development' (O'Neil, 1995) has been omitted from the table as it is deemed to involve personal interaction between teacher and student and as such it is not within the remit of course design.
Appendix 10 Focus Group Interview questions- outcome-led modules

I want to find out how you perceive learning in this module, whether this is different from your conception of learning in traditional education studies modules and which, if any, design factors influence your perceptions.

**Introductory questions**
1. When did you become aware that you were studying a learning outcome module?
2. What types of outcomes are you expected to meet in the learning outcome module?
3. How do you know what types of outcome you are expected to meet?

**Transition questions**
4. To what extent do you consciously concentrate on achieving solely the stated learning outcomes i.e., minimal achievement and solely fulfilling assessment requirements in this module?
5. What have you learned in addition to the stated outcomes?

**Key questions**
6. What do you think learning is about in this module?
7. To what extent do you see learning as different in a learning outcomes module?
   7.1 How do you think it differs?
   7.2 What has influenced your opinion?
8. What gives you clues about what learning is about in this module, how do you decide what learning is about in this module?

**Conceptual mapping exercise**
8.1 Why have you chosen to classify the factors in this way?
8.2 Would anyone like to modify his/her grid in the light of the discussion?

**Ending questions**
9. Lets summarise the key points in our discussion - key questions 6, 7,8,9 Does this summary sound complete? Have you anything to add?
10. I wanted to find out how you perceive learning in this module, whether this is different from your conception of learning a traditional module and what influences your perception - have we missed anything?
Appendix 11 Focus Group Interview questions - traditional modules

I want to find out how you perceive learning in this module, whether this is different from your conception of learning in a learning outcome designed education studies modules and which, if any, design factors influence your perceptions. Any comparisons which you can make between the modules will be helpful.

Introductory questions
1. Which objectives are you expected to meet in this module?

2. How do you know which objectives you are expected to meet?

Transition questions
3. To what extent do you consciously concentrate on achieving solely the objectives in this module? i.e., minimal achievement and solely fulfilling assessment requirements in this module?

4. What have you learned in addition to the stated objectives?

Key questions
5. What do you think learning is about in this module?

6. To what extent do you see learning as different in a learning outcomes module?
   6.1 How do you think it differs?
   6.2 What has influenced your opinion?

8. What gives you clues about what learning is about in this modules, how do you decide what learning is about in this module?

Conceptual mapping exercise
7.1 Why have you chosen to classify the factors in this way?
7.2 Would anyone like to modify his/her grid in the light of the discussion?

Ending questions
8. Lets summarise the key points in our discussion - key questions 5, 6, 7,8 Does this summary sound complete? Have you anything to add?

9. I wanted to find out how you perceive learning in this module, whether this is different from your conception of learning in a learning outcome module and what factors influence your perception - have we missed anything?
Appendix 12 Conceptual Map Grid

Module number: ED  Module name:

Name:

Tick the appropriate boxes  Male  Female

Age: 18-21  22-25  26-30  31-35  36-40  40+

What has influenced how you have come to make your judgement about what learning is in this module? Group the factors that you think influence your perception in the cells of the matrix. You do not have to use all the cells or you may add more cells.
Appendix 13 Questionnaire Learning Outcome-led Modules

Please add your name to help in administration and follow up work - you will not be quoted personally and everything you write will be completely confidential.

Module number: Module name:

Name:

Please tick the boxes below which applies to you

1. Male [ ] Female [ ]

2. Age: 18-21 [ ] 22-30 [ ] 31-35 [ ] 36-40 [ ] 40+ [ ]

3. I want you to focus on this module and write about a page on your ideas about learning in this module. Please consider:
   i. what you actually mean by learning, what you think learning is in this module;
   ii. what you know about your own learning in this module;
   iii. how you actually go about learning in this module;
   iv. how you know you have learned something in this module.

There are no right answers, I am interested in your perceptions related to learning in this module.
Please check that you have tried to write something for each part of this question.
4. If there are any ways in which you see learning as being different in a
learning outcome module and a normal module in Education Studies or in any other subject which you are studying, please list these differences below. [The learning outcome modules in Education Studies are Foundation 1, Foundation 2, Comparative Education, Appraisal, Research Methods and the Tutoring Scheme.]

5. What types of outcome do you think you are expected to meet in this module? Please:

i. tick the boxes which apply;

ii. add details about these outcomes in the space provided;

iii. indicate how you think they are assessed in this module.

a. subject knowledge related outcomes □

Examples: .................................................................................................................................
..................................................................................................................................................
Assessed through

b. transferable skills □

Examples: .................................................................................................................................
..................................................................................................................................................
Assessed through

c. academic skills □
Examples: .................................................................................................................................
.................................................................................................................................
Assessed through

6. How much of your study time do you spend on achieving solely the learning outcomes?
   a. more than 75% □ b. 51-74% □ c. less than 50% □

7. Please give a brief statement about what you think you have learned in addition to the stated outcomes.
   additional subject-specific outcomes:
   additional transferable skills
   additional academic outcomes

8. Do you think that credit is given to any aspects of learning which is not stated in the outcomes?
   yes □ no □

If you answer to question 8 is yes please state how you think you are given credit for unstated outcomes.
9. Below are listed features which may have influenced how you perceive and go about learning in this module. On a scale 1 to 5 where 1 means "definitely disagree" (xx) and 5 means "definitely agree" (√√), circle your response to the following statements.

1. There is a clear statement in the module guide of what is expected in this module

2. The reading list helps me to decide on what to focus my learning

3. The weekly sessions help me to achieve the learning outcomes

4. The module tutors make it clear right from the start what they expect

5. I make use of the assessment criteria to decide on what to learn

6. The weekly sessions do NOT help me with the assessment tasks

7. I need to ask the lecturer in order to find out what is expected of me in this module

8. I make use of the descriptions of the assessed tasks to focus my learning

9. The learning outcomes give me confidence to concentrate on my personal interests in this module

10. I use the weekly programme to plan my reading

11. The seminar sessions help me to understand the outcomes of the module

12. Lecturers expect students to accept total responsibility for their learning in this module

13. I rely heavily on other students to guide the focus of my learning in this module

14. I use the directed reading to prepare for taught sessions

15. The content of the taught sessions influences the focus of my learning

16. The module guide helps me to 'map out' what learning is in this module

17. The close link between the outcomes, the sessions and the assessment influence what I learn in this module

xx √√
10. I have been trying to find out what influences the way in which you perceive learning in this module, that is how you pick up clues about what learning is about. Please add any ways in which you think you are influenced which have not been mentioned in question 9.

11. When did you become aware that you were studying a module in learning outcome form?

a. at the first session of the module  □
b. when working on the first assignment  □
c. today  □
d. at another time please specify............................

Thank you for answering this questionnaire.
Appendix 14 Staff Interview Schedule

Traditional modules

Conceptions of learning
1. What do you think constitutes learning - the nature of learning in this module?
2. What learning objectives are students expected to achieve in the module?

Extent of a closed model
3. To what extent do students consciously concentrate on achieving solely the stated objectives i.e., minimal achievement and solely fulfilling assessment demands in traditional modules?
   more than 75%  51-74%  less than 50%

4. What has been learned in addition to the stated objectives?
5. Is credit given for any outcome which was not specified? If so how?

Outcome-led modules

Awareness
1. To what extent are students aware that they are studying modules designed in learning outcome form?
2. To what extent are students aware of the 3 types of outcomes they are expected to meet?

conceptions of learning
3. What do you think constitutes learning in this module?

Extent of a ‘closed’ model
4. To what extent do students focus on achieving the learning outcomes or objectives to the exclusion of serendipity learning?
   more than 75%  51-75%  less than 50%
5. What do you think your students have learned in addition to the stated outcomes/assessed objectives in traditional modules?
6. Do you give credit for any outcome which was not specified? If so how?
Appendix 15 Student Interview Schedule

Conceptions of learning
1. What do you think constitutes learning - the nature of learning in this module?

Awareness
2. To what extent were you aware that you were studying a module designed in learning outcome form?

3. Were you aware of the generic outcomes?

Design
4. What influenced the way you saw learning in the foundation module?

5. Where did you get your clues from?

6. How did you use the module guide? e.g. weekly session plans?

7. You were aware of the outcomes did you use them in your study time or in preparation for your assignments?

8. How did you prepare for your assignments?

9. What reading did you do? How did you choose your books and how did you organise you reading? Did you do the directed reading?

10. How did you go about the self-assessment?

11. Did you use the assessment criteria what for and how?

12. How influential do you think assessment criteria, tasks, reading lists, weekly sessions, module guides are?

13. Are there any other design factors which you think influenced the way you saw learning in the module?
Appendix 16  Node addresses and titles

(1)  
(1 1)  
   outcome
(1 1 1)  
   outcome/confidence
   outcome/confidence/undermines confidence
(1 2)  
   outcome/closed model
(1 2 1)  
   outcome/closed model/serendipity
(1 2 2)  
   outcome/closed model/no additional
(1 2 3)  
   outcome/closed model/credit additional learning
(1 3)  
   outcome/approach
(1 3 1)  
   outcome/approach/deep
(1 3 2)  
   outcome/approach/surface
(1 3 3)  
   outcome/approach/achieving
(1 3 3 1)  
   outcome/approach/achieving/grades
(1 4)  
   outcome/awareness
(1 4 1)  
   outcome/awareness/types of outcomes
(1 5)  
   outcome/responsibility

(2)  
(2 1)  
   design factors  chance/rely on lecturer
(2 2)  
   design factors  assess criteria
(2 2 1)  
   design factors  assess criteria/assessment tasks
(2 2 2)  
   design factors  assess criteria/self-assessment
(2 3)  
   design factors  congruence
(2 4)  
   design factors  module guide
(2 4 1)  
   design factors  module guide/weekly programme
(2 4 1 1)  
   design factors  module guide/weekly programme/study time
(2 4 2)  
   design factors  module guide/reading list
(2 4 3)  
   design factors module guide/short loan
(2 5)  
   design factors outcomes
(2 6)  
   design factors peers

(3)  
(3 1)  
   conceptions  pilot study
(3 1 1)  
   conceptions  research methods
(3 1 1 1)  
   conceptions  foundation 2
(3 1 1 1 1)  
   conceptions  appraisal
(3 2)  
   conceptions  prerequisite
(3 3)  
   conceptions  special needs
(3 3 1)  
   conceptions  techniques
(3 4)  
   conceptions  conception B
(3 4 1)  
   conceptions  conception B/achieving

328
(4) traditional
(4 1) traditional/awareness
(4 1 1) traditional lack of direction
(4 1 2) traditional open model
(4 1 3) traditional responsibility
(4 1 4) traditional confidence v stress
(4 1 5) traditional lack of confidence
(4 3) traditional/design factors
(4 3 1) traditional/design factors/rely on lecturer
(4 3 2) traditional/design factors/lack of congruence
(4 3 3) traditional/design factors/module guide
(4 3 4) traditional/design factors/assessment criteria & tasks
(4 3 5) traditional/design factors/peers
(4 3 6) traditional/design factors/reading list

(5) congruence
(5 1) congruence/assessment criteria
(5 2) congruence/reading
(5 3) congruence/module guide
(5 3 1) congruence/module guide/weekly programme
(5 5) congruence/awareness
(5 6) congruence/peer group
(5 7) congruence/outcomes - use
(5 8) congruence/weekly sessions
Appendix 17  Summary of the index system

1. outcomes
2. design factors
3. conceptions
4. traditional
5. congruence
Appendix 18 Relevant queries relating to reliability, dependability, and auditability

(adapted from Miles and Huberman, 1994, p. 278)

Research design
1. Are the research questions clear, and are the features of the study design congruent with them?
2. Are basic paradigms and analytic constructs clearly specified?
3. Were data collected across the full range of appropriate settings, times, respondents and so on suggested by the research questions?

Context
4. Is the researcher's role and status within the site explicitly described?

Replicability
5. Do findings show meaningful parallelism across data sources?

Checks
6. Were coding checks made, and did they show adequate agreement?
7. Were data quality checks made (e.g. for bias, deceit, informant knowledge ability?)

Agreement between field workers/peers
6. If multiple field-workers are involved, do they have comparable data collection protocols?
9. Do multiple observers' accounts converge, in instances, settings, or times when they might be expected to?
10. Were any forms of peer or colleague review in place?
Appendix 19 Validity of the Factors

The Factor 1 solution for responses relating to both the traditional and outcome-led modules (Table 5.7) was labelled 'clarity'. When interviewed, Respondent 029 who ranked high on this factor, referred to the notion of 'clarity' twice during her interview, first in relation to the module guide:

"The module guide was really good because it helped me to do my plan of work and to know what was happening on the module. I wish x (her other subject) did it in the same way like this, there are lots of people on main site who wish the modules were as clear as they are in education studies" (R. 029),

and later in relation to the outcome statements:

'I like the outcomes because you know what intentions there are, and they are clear so you can ask yourself if you have learnt this and that. They are useful because they guide your learning" (R029).

This respondent commented that she did not need to ask the lecturer to elucidate the outcomes and referred to how the reading list and the directed reading had served to provide a focus for her learning, thus contributing to the clarity of module expectations:

"I don't sit there reading masses of irrelevant information, you read much less to get more out of it, you know where you are going and therefore you don't need to waste a lot of time looking in the back of books for names or subjects or an index and then just reading the bits that are relevant" (R029).

She elucidated the extent to which she found 'clarity of expectations' through the module guide, the reading list and directed reading, and also hinting at the way in which the clear expectations served to influence her learning:

"I think I read more in x (her other subject), but I don't learn more because a lot of what I do is just skimming so you may read more but in fact you don't learn so
much you just forget it because it is a waste of time because you are really just looking for what you need to know and it's finding what you need to know that is important. In this module they tell you what you need to learn so you can get on and learn it. You don't waste time".

Although she was expansive about the clarity of the outcome statements, and the focus afforded by the module guide and the reading list, she was less positive about the extent to which she felt that the close link between the outcomes, the sessions and the assessment had contributed towards shaping her learning in the module she had studied:

"I think the seminars helped to a certain extent because they do at least follow up what the lecture input covered, but no I'm not sure that the lectures always helped with the assessment".

However she did go on to suggest, indirectly, that where such coherence does exist between the key elements of a module, then this then is influential:

"I think some of the lecturers might have related the content of the module more to each session. We knew what the assignment was about and it really helps to make things clearer if the lectures make links between each topic. I found that difficult in this module".

This respondent confirmed that all of the items (Table 5.7) which loaded on the factor "clarity of module expectations" contributed towards making the expectations of the lecturer transparent to the learner.

The analysis of an interview with student 042 whose responses were ranked low in terms of their loadings on the factor corroborated the appropriateness of the label 'clarity of module expectations'. Referring to the module guide he commented:

"It is more in depth than in other subjects...... there's additional information for a lazy person like me. It makes life easier because I don't have to look around to find out what its about, it's all clear"(R042).
He contrasted this with some of his other modules in which:

"Tutors have different interpretations of what the module is about, so we don't know what it is about because there is no structure, it's not clear, we don't always know what they [the lecturers] mean" (R042).

In both of these extracts he refers directly to the construct 'clearity', suggesting also that 'clearity of module expectations' serves to influence how he sees learning. He elaborates this point:

"You don't have to try and sort out what it is about and what you need to know, you don't need to spend the time looking around, it's less stressful because you can get on with it straight away".

This respondent failed to appreciate the link between the outcomes, assessment and taught sessions, and also felt he needed to ask his module tutor for clarification on some aspects of the module - hence his low loading on the factor as a whole - but his comments do suggest that "clearity of module expectations" is both a credible construct and one that influences how students perceive learning in a module.

The label of "clearity of module expectations" ascribed to Factor 1 for the factor solution for all the modules, is not only justified by reference to the interviews of these two students. For example, Respondent 141 (see 5.7.1) refers to 'an idea of what is expected' (p. 212); R150 to outcomes being 'defined and precise' (p. 212), a focus group respondents (p. 217) suggests that the outcome module offers the opposite of the 'willy-nilly' nature of the traditional module; and another focus group interviewee on a traditional module yearns 'a bit more clarity' (p. 224).

Direct references to the construct represented by Factor 2, 'teaching context' (Table 5.7) are not so readily identifiable in students' responses. However in her interview Respondent 032, who ranked highly in relation to Factor 2 for both traditional and outcome-led modules, differentiates between activities which were self-directed and which have been labelled "learning activities", and those which are attributable to the tutors. Thus she refers to "being given inputs and
seminars"; "knowing what the lecturer is going on about"; the need to "concentrate on what is happening in a session"; "what the lecturer covers in a session"; "the way lecturers deliver information"; "learning from the lecturer"; and "the way the sessions were designed". Her comments relating to the items in the construct (Table 5.7) are all made using the third person or the passive voice which suggests that the activities associated directly with the weekly sessions, the seminars, the lectures and the 'delivery' of the content are all teacher as opposed to learner oriented.

This contrasts markedly with the descriptions that respondents give which relate to the action they take in directed time, independently of their lecturer which have been labelled 'learning activities' (Tables 5.7 and 5.9). Learner action, not surprisingly, is couched in the first person, in learner-oriented language as exemplified by such comments as; "I cross-match the assessment criteria with the learning outcomes"; "I sort out the directed reading so that I Know what the lecturer is going on about"; "I concentrate on the learning outcomes and the assessment criteria"; "I think for myself"; "I do do the directed reading"; and "I use the learning outcomes".

'Congruence between the outcomes, teaching context and assessment régime', the label given to Factor 1 of the analysis from respondents taking outcome-led modules, is never directly referred to by students. But Respondent 032, who ranks high on this construct, does allude to the 'whole process' of learning;

"I think when you know what the outcomes are you think this is where we start off in week one and here's the assessment on page whatever, and this is where I am hoping to end up at, but it's not just the outcomes or the assessment it's the whole process that influences you" (R.032).

She further hints at the links between the sessions, the assessment and the outcomes which is represented by the label 'congruence' in saying:

"I like these modules [outcome-led] because I like to know as soon as I go into a module what the assessment is straight away, I like to know where I am going you
know and how I am going to get there. It's good to have the weekly programme written down, it's good to know week by week what you are doing, because again you can see where you are now and where you are going. If you have any problems you can think, right do I leave it a while until it comes up in the session and wait for the seminar, or do I try and sort it out now? But if you can't do it yourself the programme is set, it is there, and you know you can have some input on it" (R.032).

Whilst this student is notably perceptive in appreciating the influence of the integrated and coherent design on her learning, other respondents e.g. 071; 095; 098; 094 (see 5.7.2) and 017 and 022 (see 5.7.3) have also acknowledged it. This is not a label which has been derived directly from students' comments, but rather one which is both grounded in the findings and explicit in the outcome-led module; it is deemed to best describe the construct and the specific feature of curriculum design which it represents.

The third factor which emerged from the analysis of the outcome-led modules was labelled 'reliance on lecturer and students' (Table 5.9), which has its origins in the item 'I rely heavily on other students to guide the focus of my learning' which loaded on to the construct. One respondent (061) who was ranked high on this construct did not actually state that the module guide did not give a clear statement about what learning was about in the module, but it was evident from the interview that he had not utilised the module guide to glean information relating to learning in the module. He suggested that he paid little regard to the module guide saying "I don't bother with the assessment criteria" and "I didn't really read the outcomes" and that he had to "concentrate hard to stay on track". The statement about expectations in the module had thus bypassed him completely. This left him floundering and having to resort to both the module tutor and his peers to focus his learning:

"I did have to rely a lot on x [the module tutor] to know what to do. I didn't attend all the sessions because I didn't think they were relevant, but in the end I was struggling" (R. 061).
He also suggested that he asked fellow students for guidance on a number of occasions, particularly with reference to the presentations. These data contrast with the comments from respondent 051, who ranked low on the construct 'reliance on lecturer and students' who when asked whether she had consulted her module tutor for guidance responded:

"No I didn't ask him at all what I was supposed to do, no it was all very clear, that was all laid down in the module guide" (R. 051).

With respect to her peers she responded that she had discussed the module with students on the level of study above her, but not in terms of learning in the module which was clear, but rather about whether it was a 'good' module to take. This finding was further corroborated by Respondent 024 who also ranked low on this construct, when asked whether she needed to ask her module tutor about what learning was in the module, commented:

"The module guide is very clear, and so no I didn't need to ask him at all about where I was going at all' (R. 024)

But like Respondent 051, she was less clear about the role of her peers:

"But we did discuss what we needed to do in our group when we were doing the presentations " (R.024).

These findings suggest that this label is also appropriate, but that the level of reliance on peers and tutors is as much dependent on the extent to which students assimilate and act upon the statements about what learning is expected as it is upon their existence.