INVOLVEMENT IN ACADEMIC STUDY: AN INVESTIGATION OF THE NATURE, EFFECTS AND DEVELOPMENT OF INVOLVEMENT IN UNIVERSITY COURSES

by

Deborah Margery Willis

A thesis

submitted to the Victoria University of Wellington
in fulfilment of the
requirements for the degree of
Doctor of Philosophy
in Education

Victoria University of Wellington
1989

ABSTRACT

The purpose of this research was to examine involvement in study within the framework of the approach to learning literature. Although not discussed in detail, involvement has been related to a deep approach to learning (Ramsden, 1984).

Specific interest focused on students' perceptions of the concept of involvement; the relation between involvement, approach to learning and educational orientation (Taylor et al., 1980); the relationship between involvement in study and learning outcome and finally, the reasons why students become involved and factors affecting change over time.

The research methodology used was consistent with the view – originally developed by Marton and Saljo (1976a) – that learning can be effectively studied by focusing on student perception of the learning process. Consistent with Marton's methods of research, the data was drawn from interviews (with 58 university students). Additional data was supplied by open ended questions and Entwistle and Ramsden's approach to study inventory.

Students produced a range of involvement definitions that emphasised activity but also incorporated feelings about what is studied. However, the experience of involvement is course-specific and it was demonstrated that students direct different levels of involvement to different courses. An investigation of factors that affect students' concept of involvement, revealed that approach to learning was important in determining the type of involvement activity students engage in ('basic' or 'more than required') and the level of involvement activity (full, limited, none). A vocational educational orientation was not incompatible with the development of involvement provided this was combined with interest in subject matter. Commerce students provided an interesting example of this point in that they typically possessed a strong vocational educational orientation

towards their Commerce courses but directed their interest (and in many cases their full involvement) to courses outside the Commerce faculty. Analysis of the data indicated that female students were more likely to become fully involved in their study than did their male colleagues. However, the pattern of results was complicated by degree and approach to learning. It was suggested that the sex differences may be due to the fact that females were more likely to combine interest and vocational interests in their choice of courses. The results indicated that a relationship did exist between the quality of the involvement activity and the quality of the learning outcome.

The open ended responses indicated that students possess one of three involvement intentions (positive, neutral or negative). This finding was confirmed in the interviews and a number of relationships were proposed that combined intention and contextual factors to determine a particular involvement outcome (involvement or non-involvement). It was further demonstrated that context is particularly important in influencing involvement. In most cases students' intention was changed by their positive or negative perception of the course context. Thus involvement developed from a combination of personal (e.g. existing interest) and contextual factors (e.g. staff attitude and presentation skills, relevance of course content and form of assessment). These factors were also significant in affecting involvement change.

Regardless of approach to learning, an involved student wants to learn. Through this commitment, persistence in study is more likely to occur. The involvement activities themselves will be largely determined by approach and thus the quality of the outcome is related to approach. The thesis concludes with discussion of the implications of these results for policy, teaching and course development.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

Chapter

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

LITERATURE REVIEW
FACTORS AFFECTING APPROACH TO LEARNING

INTRODUCTION

In the last twenty years researchers within the cognitive tradition have given respectability to a concern with internal mental processes. Craik and Lockhart (1972) demonstrated the existence of separate memory structures, each performing a different function. Information processing theorists such as Lindsay and Norman (1972) suggested ways in which material might be organised within memory. Ausubel too has been influential with his concept of meaningful learning as the integration of new material into an individually unique cognitive framework (Ausubel, 1968)[1]. Although cognitive theorists have tended to focus on structures[2], they played a key role in moving educational thinking away from a conception of the learner as a mechanistic being who reacts to environmental stimuli, or acts to restore a state of equilibrium (Parlett, 1973). The learner is regarded as purposive in his/her actions.

Glaser (1976), while concerned with structures, conceived of the learner as a participant in the learning process, a crucial part of which is the interpretation of context. He envisaged learning and memory as an integrative process in which there is an active, constructive interaction with events that are encountered in the world. Structures of knowledge stored in memory continually evolve as an individual learns and the nature of these structures affects the way in which new information is acquired. Individuals build up different conceptual structures as a result of their different experiences, and hence they can be expected to bring their knowlege to bear upon new learning in different ways.

Using concepts described by information processing theory (e.g. short and long term memory), Gagné (1985) was particularly interested in the processing that took place when material was stored and subsequently retrieved for use in various learning tasks. It appears that strategies used during initial processing play a significant role in affecting the structure of stored material (Gomulicki, 1956). Gomulicki demonstrated that in fact the reconstruction actually took place not at the point of recall as Bartlett (1932) had suggested but during initial encoding[3].

More recently, research interest has focused specifically on learning processes. Human memory is not limited by storage capacity but rather the ability or awareness to utilize executive functions thus giving an important place to critical thinking, meaningful problem solving (Sprague, 1984), and procedural and conceptual knowlege (Stewart, 1982).

Much of the memory research was performed in the laboratory using material isolated from its educational context (e.g Bower and Clark[4], 1969; Taversky and Kahneman, 1973). However, both Glaser and Ausubel were interested in meaningful learning. This interest in meaningfulness is continued in more recent research into student learning which is more likely to be located in the 'real world' (Entwistle and Ramsden, 1983; Richardson, 1983) than in the laboratory.

Research focusing on student learning at the tertiary level has moved from a concern with the development of teaching methods (e.g Beard et al., 1978) and attempts to find the 'ideal' student (e.g. R. Heath, 1978), to an interest in exploring approaches to learning based on an acceptance that students approach study tasks in a number of ways (Wankowski and Cox, 1973; Entwistle et al., 1979a). There has also been a departure from attempts to find factors that predict student performance, such as personality or motivation (e.g. Entwistle and Wilson, 1970), to the processing and structuring skills that lie behind learning (Lawless, 1979).

Learners are individuals who bring with them a unique collection of previous learning and skills as well as attitudes to learning. They actively interact with material to produce a unique outcome. Research energy is now increasingly devoted to identifying the factors that influence student perception and gaining a more complex understanding of the relationship between a student's approach to study and the quality of the outcome (Marton and Saljo, 1976a; Ramsden, 1985). Learning is more than the acquisition of bodies of information, it is an organising activity engaged in by individuals who have a particular intention (Svensson, 1984). Ramsden (1985) argued that the quality of the activity is determined by students' perception of the learning context and the learning demands as well as by personal learning skills. The effectiveness of these skills will depend on the student's own abilities, experience and the appropriateness of the skills for a particular task. Concern is therefore not so much with course material or its presentation, but on how the student deals with the material in the light of a perception of course demands (Svensson, 1977). Thus the quality of what is learned largely depends on the activity of the learner.

The purpose of this chapter is to examine the literature directed at aspects of students' approaches to learning and in particular to examine the personal and contextual factors that influence that approach. The discussion proceeds as follows: Firstly an examination of the Swedish research that has demonstrated the existence of a relationship between processing and the quality of learning outcome. Secondly, the discussion is directed at the nature of study orientation and approach to learning and the metacognitive strategies that seem to underlie the effectiveness of study strategies. Thirdly, the personal factors of educational orientation (reason for study) and concept of learning are discussed in some detail. The fourth element in the review is an examination of possible change in study orientation associated with intellectual development. The final section of

this chapter looks at learning context and its influence on student approach to learning.

QUALITY OF THE LEARNING PROCESS AND OUTCOME

Mention has already been made of the increasing emphasis on quality as opposed to quantity of learning. Learning quality includes the level of *outcome* achieved by a student as the result of learning and the level of *processing* used to reach that outcome (Marton and Saljo, 1976b). This section of the literature review examines the nature of learning outcome and processing, their measurement and the relation between process and outcome.

OUTCOME OF LEARNING

The view that an effective learner is one who is able to reproduce large amounts of detailed information is common (Dahlgren, 1984). For example, television programmes like 'Mastermind' are based on the assumption that the ability of the contestants is a direct reflection of the amount they can recall. Despite this commonly held conception of learning, the qualitative outcome of learning has been acknowledged for many years (Bartlett, 1932, Dewey, 1963). As Bartlett demonstrated, students differed not only in the amount they could remember but also in the nature or quality of that recall.

In what is now a classic piece of research, Marton and Saljo (1976a) examined qualitative differences in learning process and outcome. Using a second order or phenomenographical[5] research approach (Marton and Svensson, 1979; Marton, 1981), Marton and his collegues at Gothenburg have attempted to investigate learning from the learner's own perspective. Thus 'in this perspective the world as experienced by him becomes visible' (Marton and Svensson, 1979 p. 472). In one study, forty university students were asked to read a newspaper article on reform of higher education[6].

Students acted as paid volunteers, and each worked individually. Marton and Saljo asked each person 'to read one or more passages of prose within suggested time limits' (p. 4)[7]. At the end of this time, students were asked to recall the contents of the text and produce a brief summary of the article. After rigorous analysis of the responses[8], Marton identified four qualitatively different levels of outcome which were described 'in terms of the content of the learning material' (p. 8).

Marton and Saljo use the term 'outcome space' to describe the range of outcomes that result from learning a particular task[9]. It is important to emphasise that the outcome space for one task is unique to that task. Table 1.1 provides a useful summary of the general aspects of the levels.

Table 1.1 Four categories of deep and surface processing

Category of processing	Level of understanding
Deep active	Understands author's meaning and shows how argument is supported by evidence.
Deep passive	Mentions the main argument, but does not relate evidence to conclusion.
Surface active	Describes the main points made without integrating them into an argument.
Surface passive	Mentions a few isolated points or examples.

From Entwistle, 1981 p. 85

Before examining the relation between outcome and processing that is clearly demonstrated by the work of Marton and Saljo (1976b), the following section is concerned with the nature and measurement of learning processes.

LEARNING PROCESSES

Gagné (1985) argued that processing describes the processes or strategies that are used by the learner to organise information in a permanent form in memory. If the material is to be retrieved at a later date and used to undertake higher level learning tasks such as problem- solving (Gagné, 1985) application and evaluation (Bloom, 1956), it must be integrated within the learner's existing framework. Processing then takes place during the storage of information. However, following the work of Marton (Marton and Saljo 1976b), processing actually begins at an earlier point in time and includes the strategies students use when selecting what they will learn.

According to writers such as Ausubel (1968), integration of material into memory will take place much more readily if the material is meaningful to the learner. High quality processing will occur when a student uses learning strategies that both make material meaningful and serve to integrate new material with that already in storage. Such strategies include searching for underlying meaning, relating concepts to those already learnt and the use of evidence; in short, strategies where the learner actively organises the material. Low level strategies reflect a more passive approach. This is not to say that the learner is idle as a great deal of time and effort may be expended in attempting to rote learn a body of information (Svensson, 1977). However, the learner is not actively engaged with the material and concepts are seen as isolated units and unlikely to be retained long term. Of course, as previously mentioned, a student's intention – either understanding or memorisation – as well as their concept of learning[10] (Saljo, 1978) will also be important in determining the quality of processing. As yet it is unclear how flexible students are in the use of various levels of processing. Laurillard (1978) suggested that many students implement strategies at various levels depending on their

objectives. After an extensive review of the literature, Richardson (1983) concluded 'the evidence thus suggests that there is some flexibility in students' approaches to learning, but that there are restrictions upon that flexibility in the case of at least some learners'. (p. 326)[11].

RELATION BETWEEN PROCESSING AND OUTCOME

Marton assumed that qualitative differences in outcome were related to qualitatively different forms of processing. By asking students to describe how they set about reading an academic article, Marton identified two levels of processing (Marton and Saljo, 1976b). Deep processing involves an intention to understand the author's meaning and to explain evidence in relation to the conclusion with reference to previous knowledge and experience. However, if a student attempts to memorise discrete facts or ideas, and perceives the task in isolation he/she is processing information at a surface level. Learners who adopt a surface approach perceive the text in horizontal terms. In other words they do not observe variations in depth between the topic and its underlying meaning. Further research has led to the subdivision of deep and surface approaches to include active and passive characteristics (refer Table 1.1). Clear evidence of a link between process and outcome was demonstrated by Marton and Saljo (1976b). Corroborative results have been produced by later research at Gothenborg (e.g. Svensson, 1977) and independent work (e.g. Watkins, 1983a).

Marton and Saljo (1976b) demonstrated a relationship between level of processing and outcome but continued to keep activity separate from its result. Svensson (1977) was more interested in the organisational aspects of learning and in fact suggested that organisation is a crucial factor in determining learning skill. Svensson's own observations led him to conclude that a student's skill and knowledge were so closely linked that it would be useful to conceive of them as one and adopted the terms atomistic and holistic to describe surface and deep processes and outcome respectively.

In his later work Marton (Marton and Saljo, 1984), while recognising the distinction between process and outcome, used the term 'approach' which was seen as more accurately reflecting the integration of intention and strategy and served to distance their work from information processing theory[12].

Amongst Marton and his collegues there appears to be some uncertainty about the relation between the deep approach and understanding as an outcome of learning. Reference is made by Svensson (1977) to levels of understanding. He suggested that 'a holistic learning process is...a necessary prerequisite for the acquisition of a deep level of understanding' (p. 242). However, Marton and Saljo (1984) asserted that they 'are not arguing that the deep/holistic approach is always 'best': only that it is the best, indeed the only way *to understand* learning materials'. (p. 46). Is learning that results from a surface approach low level understanding or not understanding at all?

Pask (1976) was also interested in understanding as an important qualitative outcome of learning. He identified different styles of learning adopted by students seeking understanding[13]. Pask argued that understanding can only be achieved when the learner combines the global strategy of what he called holist learning and the more detailed serialist strategy. The effective application of these two strategies seems likely to result in long term storage - a criterion of meaningful learning for both Pask (1976) and Gagné (1985). Understanding resulting from integration seems more likely to be the product of deep processing with surface processing leading to rote learning. It is important to note however, that Pask's holist strategy does not incorporate the learner's intention as is the case with the holist approach of Svensson (1977). A further point characterising Svensson's definition is the suggestion that the learner may also attempt to relate the material to 'a wider context' (p. 238). For Pask the holist strategy is not

sufficient to obtain a full understanding. 'Holists take a broad view in which they 'learn, remember, and recapitulate as a whole: formally, in terms of "high order relations". (Pask and Scott, 1972 p. 218). To reach a complete understanding the learner should combine this holist strategy with serialist learning in a versatile way.

To confuse matters further, Brumby (1982) also uses 'holist' to describe one component of cognitive style[14]. The student is aware of the various components of a problem but integrates them to form a whole – placing them in the surrounding context. Although Brumby is referring to students' perception of problems, she suggests both Pask and Svensson's concepts of holist relate to her own. In the broad sense of referring to an overall perception of particular material this is true but Svensson goes beyond perception to clearly link intention, strategy and outcome while Pask's concept of holism is defined specifically as a learning strategy.

A student who seeks underlying meaning, whether this is described as a deep/holistic approach (Marton and Saljo, 1984) or versatile learning, combining Pask's holist and serialist strategies, is more likely to gain an understanding of the key ideas than one who focuses on superficial aspects.

However, understanding as described above is a cognitive phenomenon. Humanists like Carl Rogers stress the importance of personal meaning in any attempt to achieve understanding. Rogers (1969) emphasises the importance of meaningful learning. This concept parallels the deep approach of Marton, however it also embodies an emotional element. The learner is excited, stimulated and assumes responsibility for his/her own learning. Similarly Ford (1979) argued that deep processing may reflect learning at a cognitive level with no affective involvement. It is significant that Ramsden (1985) has described two types of deep approach, 'one representing an emphasis on personal meaning and another on previous knowledge' (p. 56),

Despite the confusion of terminology the existence of deep and surface approaches has been confirmed in studies using a range of methodologies (e.g Thomas and Bain, 1982; Entwistle and Ramsden, 1983; Watkins, 1983a). It is important to take note of Ramsden's (1985) warning against oversimplifying one's conception of student learning by reducing it to a deep-surface distinction.

An important contribution of the Gothenburg research has been the demonstration of a direct relation between processing and outcome quality. How students learn clearly affects the depth of their understanding. What is not so clear is whether the deep approach is the only way one can reach understanding.

ORIENTATION AND APPROACH TO LEARNING

Entwistle (1981) has argued that one can legitimately be concerned with consistency of, as well as variability in students' intellectual processes. The Gothenburg work stressed the importance of variability, while Entwistle's own research has focussed on the development of a technique for measuring stable orientations to study[15]. This section examines the concepts of study orientation, learning style and approach to learning[16].

As part of a continuing attempt to measure motivation for, attitudes to and methods of studying (Entwistle and Wilson, 1977), Entwistle et al. (1979a) incorporated the deep and surface approaches of Marton (Marton and Saljo, 1976b) and styles and strategies of learning identified by Pask (1976) into the Approach to Study Inventory (ASI). The ASI has undergone considerable development since that time[17] and comprises a 64 item questionnaire with 16 subscales. Its purpose is to identify a student's general orientation to study rather than their response to a specific

learning situation[18].   Recent forms of the ASI (Entwistle and Ramsden,

1983; Ramsden, 1984) have identified four orientations to study (Table 1.2).

Table 1.2 Categories in the approaches to studying inventory

Meaning orientation

Deep approach	Looks for meaning; interacts actively; links with real life.
Use of evidence	Examines evidence critically and uses it cautiously.
Relating ideas	Actively relates new information to previous knowledge.
Intrinsic motivation	Interested in learning for its own sake.

Reproducing orientation

Surface approach	Relies on rote learning; conscious of exam demands.
Syllabus-boundness	Prefers to restrict learning to defined syllabus and specified tasks.
Fear of failure	Anxiously aware of assessment requirements; lacking in self confidence.
Improvidence	Not prepared to look for relationships between ideas; fact bound.

Strategic orientation

Strategic approach	Actively seeks information about assessment requirements; tries to impress staff.
Extrinsic motivation	Qualifications as main source of motivation for learning.
Achievement motivation	Competitive and self-confident; motivated by hope for success.

Non-academic orientation

Disorganised study methods	Organises time ineffectively, fails to plan ahead, not prompt in submitting work.
Negative attitudes	Little involvement in work set; cynical and disenchanted about higher education.
Globetrotting	Over-readiness to generalize and jump to conclusions without evidence.

Table 1.2 continued
Styles of learning

Comprehension learning	Holist strategies preferred; uses illustrations, anecdotes, analogies and intuition to build up overall picture.
Operation learning	Serialist strategies preferred; concentrates on details and logical analysis.

Ramsden (1984) p. 159

The meaning and reproducing orientations incorporate the dimensions deep and surface approach respectively. During the development of the inventory, (Entwistle et al., 1979a) approach and orientation were distinguished on the following grounds:

1.   Deep and surface approaches were content specific while the study orientations were relatively permanent. However, in the same paper Entwistle et al. acknowledged that the approach to study subscales assume 'that students will exhibit sufficient consistency in intention and process across broadly similar academic tasks to justify measuring it (approaches to study) as a dimension' (p. 367) (brackets mine)[19].

2. The meaning orientation 'involves tendencies towards superficiality, i.e. towards the pathology of globetrotting.' (Entwistle et al., 1979a p. 375). The deep approach contains no such suggestion[20]. However subsequent research using a version of the ASI with separate dimensions for Pask's learning pathologies[21] (e.g. Watkins, 1982a; Entwistle and Ramsden, 1983) has suggested that while comprehension learning appears to be consistently related to the meaning orientation, the role of globetrotting is unclear. Entwistle and Ramsden found that it loaded on a disorganised and dilatory factor (non academic) which led them to argue that style and strategy were justifiably included in the ASI as separate dimensions. In his analysis of the ASI, Watkins (1982a) produced a factor with loadings on both

globetrotting and improvidence as well as the surface approach, disorganised methods, negative attitudes and fear of failure.

Both Entwistle and Ramsden (1983) and Watkins (1982a) identified differences by university faculty in operation and comprehension learning scores. Students in the faculties of Arts and Social Science tended to score higher on comprehension learning, while Science students obtained higher operation learning scores. Globetrotting was more common in the Arts departments although the difference was not significant and Entwistle and Ramsden (1983) were unable to conclude that 'learning pathologies are a function of the type of discipline studied' (p.183). Thus it seems that some students (ie. in Arts faculties) may combine a comprehension learning style with a tendency to globetrot, but this is not common to all individuals.

3. In addition to the dimension 'surface approach', the reproducing orientation also incorporates an operation learning subscale, operation learning being a style defined in terms of a focus on detail and factual evidence in a search for understanding (Pask, 1976). The surface approach places emphasis on an intention to memorise the information and a concentration on the surface features of a text. In later work, Pask's pathology of improvidence has been shown to consistently load on a reproducing factor (Watkins, 1982a; Entwistle and Ramsden, 1983). However, Watkins found that operation learning defined its own factor, leading him to suggest that the reproducing orientation may in fact reflect two components - surface/confusion and surface/operation.

During the development of the ASI, the dimension 'deep approach' came to refer specifically to 'the intention to understand and an active, critical approach to learning' (Entwistle and Ramsden, 1983, p. 41) and the subscales 'relating ideas' and 'use of evidence' were added to the inventory. Both were seen as important in determining a deep level of outcome and loaded on the meaning orientation. Further work on student reading

behaviour revealed two types of deep approach. In the first the student sought personal meaning and in the second, previous learning was used to develop understanding (Entwistle and Ramsden, 1983). Deep processing therefore can be more than the implementation of deep level strategies (Ford, 1979) as some students who adopt this approach use it in a search for personal meaning.

Entwistle et al. (1979a) distinguished between learning strategy and style. 'Strategy is a description of the way a student chooses to tackle a specific learning task in the light of its perceived demands, and style is a broader characterisation of a student's preferred way of tackling learning tasks generally'. (p. 368). In the British work, use of the concept style is restricted to Pask's use of the term[22] (Ramsden, 1985). Both style and strategy are incorporated into the study orientations described above. Learning style is used in a wider context in American literature with emphasis on perception and information processing. This has given rise to some confusion with the concept of cognitive style (Messick, 1968).

Further research (Entwistle and Ramsden, 1983, Laurillard, 1984) suggested that Pask's operation and comprehension learning styles are closely associated with personality traits. For example, students with high comprehension scores tended 'to have high scores on a group of personality traits which relate to interest in ideas, but they also tend to be more ready to express impulses and admit feelings of anxiety and inadequacy' (Entwistle and Ramsden, 1983 p. 77).

Laurillard (1984) clarified the relationship between Pask's styles of learning and deep and surface approaches by making a distinction between learning at a global and local level. In the former, the student directs his/her attention to the inter-relation between elements and between the elements and the whole. At a local level the student is concerned with individual detail with no reference to theory. Laurillard argued that

comprehension and operation learning can take place at either level so that a student operating at the local level for comprehension learning makes descriptions of concepts but does not 'attempt to integrate concepts or establish relations between them'. (p. 140). She pointed out that while deep/holist and surface/atomist approaches do not separate procedures and descriptions as Pask does, there is 'a tentative correspondence between deep/holist approaches and both comprehension and operation learning at the global level, and between surface/atomistic approaches and both comprehension and operation learning at the local level' (p. 141)

Support for the assumption that students do have relatively enduring orientations to study has come from the research of Thomas and Bain (1982). Using a seven-item test of deep and surface strategies, the authors pointed to consistency across types of assessment (objective tests and an essay). They suggested that their first year teacher trainees were using the deep and surface approaches stylistically rather than strategically. However as Thomas and Bain commented 'the course lecturer intended the multiple choice items to be sensitive to higher order learning' (p.257). The wording of the items appeared to reveal more of a difference about appropriate strategies of learning in mathematics and psychology than to demonstrate conclusively that students consistently adopt a deep or surface approach. The students used in the study were inexperienced and may have lacked the metacognitive awareness[23] to adapt their strategies to suit course demands[24]. The call made by the authors for a study with 'a longer time frame and a greater cross-section of post-secondary students' (p. 257) is clearly justified.

Biggs (1978, 1979) independently demonstrated the existence of three second order factors, very similar to those obtained by Entwistle (Ramsden and Entwistle, 1981). Biggs based his work on the assumption that 'performance is then presumed to be affected by personality and

environmental factors via the study process complex' (Biggs, 1978 p. 266). These 'presage factors influence the student's motives which are 'likely to determine the strategies the student uses and hence his performance' (p. 267)

Using the Study Process Questionnaire[25] (SPQ), Biggs identified three independent motive-strategy dimensions.

1. Utilising; to obtain qualification with the minimum effort (later termed surface approach[26]).

2. Internalising; aimed at actualising interests (later termed deep approach).

3. Achieving; publicly manifesting one's excellence.

He suggested that motive and study strategy were relatively stable characteristics, stemming from the basic personality genotype and a set of academic values (perception of university in the means end system). In a later paper Biggs (1982) wrote, 'A student will be motivated to perform (or not to perform) in a certain way at a certain level, given his prior learning, his ability, his perception of specific course and task demands, and the importance he attaches to success or failure' (p.35). The factors affecting motivation are largely context specific and suggest an adaptive student. According to Biggs (1985), individuals differ in the development of their metacognitive awareness which affects their sensitivity to contextual demands. He suggested that the deep and achieving approaches are associated with an awareness of current level of understanding. However the achieving approach, when combined with poor motivation and low ability may be used in an unconscious way. The surface approach, although clearly appropriate in a situation that demands the learning of detail, is more likely to result from 'habit or of despair' (p. 202) rather than metacognitive awareness[27].

Although not directly concerned with establishing a relationship between study motive and strategy, Nicholls (Nicholls et al., 1985) described three personal goals held by high school students. These closely resemble the approaches Biggs identified in university students. Nicholls' ego/social orientation is similar to the achieving approach in that the student seeks to display his/her ability to others. Secondly, in avoidance of work, the object is to obtain high marks with little effort or avoid work. In this case, parallels are obvious between this goal and Biggs' surface approach. The student does no more work than required by the course (Biggs, 1978). Both Nicholls' goals suggest that learning in terms of mastery or understanding is not an important objective. In contrast, Biggs' deep approach is similar to Nicholls' concept of task orientation where the object is to work hard and understand the content.

Whilst there has been general support for the existence of Biggs' dimensions there is still some doubt as to their exact nature and composition (e.g. Watkins, 1982b; O'Neil and Child, 1984), particularly whether a match/mismatch of the motive and strategy affects academic performance. Watkins and Hattie (1981) while supporting the structure of Biggs SPQ for Australian students, are doubtful about its applicability to Filipino students which raises questions about the generalisability of these results to other cultures[28].

Recently Biggs (1988) has argued that deep and surface approaches 'describe ways in which students engage in the task itself, while the achieving strategy describes the ways in which students organise the temporal and spatial contexts surrounding the task' (p. 129). With this distinction in mind Biggs' identified two additional approaches that are derived from the basic approaches of surface, deep and achieving. The first combines an achievement motive with the reproductive surface strategy (surface-achieving approach). Students believe high marks will result from rote but organised learning. In contrast, the deep-achieving approach

combines intrinsic motivation and a desire to gain high marks through which the student seeks meaning in an organised and strategic way.

Biggs (1988) argued that the quality of student learning may be improved by adopting instructional practices that will discourage a surface approach, focus on the development of a deep approach and encourage an achieving approach in students. According to Biggs, a deep-achieving approach is associated with meaning and good grades. 'An achieving approach... is more directed towards context than content; it generalises across tasks more easily' (p.134). However, contradictory results come from Nicholls (1984) work on ego and task orientation[29] which found that a focus on grades in a competitive situation is incompatible with interest and a concern with mastery of the task in its own right[30].

Although American researchers have tended to use different terminology,[31] in general terms their results do suggest that students are consistent in their general way of learning. Schmeck (1983) developed a similar inventory to the one devised by Entwistle and his colleagues, although its origins lie with information processing theory. Schmeck based much of his thinking on the work of Chickering (1976; 1981) who suggested that students need to be versatile in their learning strategies and alternate between integration, the construction of the whole and differentiation involving perception of interacting parts. Much of this work is based on the research into cognitive styles.

Schmeck distinguished 'learning style' from cognitive style, viewing the former as more specifically referring to learning and defining it 'as a predisposition to display a particular pattern of information processing activities' (p. 234-5). It is important to note the similarity between Schmeck's general definition of learning style and Entwistle's concept of orientation to learning as both reflect a general predisposition to study in a particular way. Schmeck (1983) expressed the difference between style and

strategy thus '...a learning style is a predisposition on the part of some students to adopt a particular learning strategy regardless of the specific demands of the learning task' (p. 233). He identified four main dimensions of human learning based on behaviourally oriented statements which have obvious parallels with the orientations outlined by Entwistle, however the methodology for obtaining them was somewhat different. Schmeck's original pool of 121 statements were prepared with the purpose of reflecting current theory in the area of learning and memory (Schmeck et al., 1977). These ideas were expressed behaviourally in such a way as to be meaningful to the experience of university students. Factor analysis yielded four factors

1. Deep processing. Initially called synthesis/analysis (Schmeck et al., 1977), it assesses a student's ability to structure information and also re-organise it. Schmeck (1983) distinguished his concept of deep processing from that of Marton, specifically referring to 'an information process of verbal classification' (p247). He did not include any assumptions about a student's intention as did Marton's (Marton and Saljo, 1976b) and according to Schmeck, a student who obtains a low score on his deep processing dimension will not necessarily be focussing on factual material. Memory of facts comes about through the employment of strategies described by the Fact Retention scale. Schmeck, however, did not envisage a failure to engage in deep processing as necessarily leading to retention of detail at the expense of meaning. Furthermore, he clearly differentiated structuring of knowledge and personalisation. The latter is embodied in his scale of elaborative processing. Conceptual understanding may result without any personalisation of knowledge. The same point was also made by Ford (1979)

2. Elaborative processing. Emphasis is placed on an active attempt to relate new and old information thus making it personally meaningful.

Entwistle incorporated facets of these two factors in the meaning orientation as did Marton in the deep approach. However, Schmeck perceived the organisation of material as separate from the ability to integrate material into one's existing cognitive framework. He argued that

> *'elaboration can involve the processing of more concrete associations, or examples, from the person's actual experience without any change in depth of processing. In our system, elaboration is an exercise in applying information to one's own life or personalising it, whereas deep processing is a more "academic" exercise in verbal classification and categorical comparison'* (Schmeck, 1983 p. 248).

3. Fact retention. This scale is similar to the operation learning style of Pask (Pask and Scott, 1972) in that students store details and facts. This strategy can be implemented independently of other information processing strategies a student may use. According to Schmeck, a student may focus on fact retention in addition to deep processing. While such a strategy may reflect versatile learning it is important to consider the student's intention as it is intention that will determine whether the student looks for surface detail or more general meaning.

4. Methodological study described adherence to established study methods. Schmeck suggested that students with a high methodological study score have high achievement motivation but are not able to engage in deep or elaborative processing. Of the four dimensions this was the only one to be inversely related to academic performance. Such an approach suggests a student with a low level of metacognitive awareness, unable to adapt to changing demands, and is very similar to the surface-achieving approach described by Biggs (1985).

Schmeck's scales are concerned with strategies of processing. They do not have the same links between attitude or motivation as those of

Entwistle (Entwistle and Ramsden, 1983) or between the role of intention (Marton and Saljo, 1984).

Learning style has also been interpreted as particular student preferences for particular course presentation. Gregorc (1979) suggested that individuals' behaviour provided information on 'how their minds related to the world and therefore how they learn' (p.19). Data was collected using interviews and observation of the 'way students and adults accumulated and reacted to facts, principles, attitudes and skills' (p. 20). A basic subdivision emerged between the use of concrete and abstract experience each with random or sequential preference. Gregorc suggested that learners each exhibit elements of all four patterns but have certain 'inborn' predispositions to one or the other. Each combination represents stylistic preferences by students for particular types of presentation, for example, 'concrete sequential' represents a preference for a structured setting, step-by-step presentation and hands on experience. Students may indeed have particular preferences but there is little indication of what actually happens to the quality of learning when there is a mismatch between style and mode of presentation[32]. Gregorc indicated that the styles are modifiable in circumstances where the learner reacts to the demands of the task, however, the newly acquired mode of responding will never be as fluent as the original. Apparently individuals are limited by their style. However, the theoretical basis for these principles is unclear with little direct evidence provided to support his claims.

Fuhrman and Jacobs (1984) developed the Learning Interactions Inventory through which they identified three learning styles; dependent, collaborative and independent. According to the authors, individuals will use any one of the three depending upon contextual factors but have preferences based on personality characteristics. This idea is similar in many ways to that suggested by Entwistle and Ramsden (1983), particularly

in the emphasis on the intervening influence of context. A point of departure is Fuhrman and Jacobs' suggestion that students move from dependent to independent styles with age.

Quite clearly students adopt a number of different approaches to their studies. Despite the multitude of terms and methodologies clear evidence exists for what will be called a deep approach to studying, where the student sets out to achieve understanding by actively manipulating information and/or seeks personal meaning. A second approach is basically reproductive, stressing a narrow focus on information and possibly rote learning strategies. Underlying these approaches are more general and stable orientations to learning (Ramsden, 1984) and although they have been 'found to be associated with characteristic forms of motivation and attitudes to studying...study orientations, however, are not assumed to be unchanging characteristics of students'. (p. 158). A key factor in the European and Australian research and one that is given little emphasis in the United States, is the role of intention. To understand students' approach to study more completely it is important to acknowledge the role of a student's reasons for study (Marton and Saljo, 1976a,b; Biggs, 1979; Entwistle and Ramsden, 1983). Significantly Entwistle and Ramsden (1983) use intention as a focus to suggest that 'the intrinsic (internal) or extrinsic (external) functions of educational experiences seems to be the broadest way of conceptualising differences in learning' (p. 196)

Reasons why students adopt different approaches is still unclear, although some link between motive and strategy and possibly personality seems likely to exist. Perhaps it is too simplistic to assume that a goal oriented model will totally explain underlying factors affecting study strategies (Rockhill, 1982). With this cautionary word in mind the following section examines the relation between students' approach to

study and their more general educational orientation to university study (i.e. reasons for undertaking study).

EDUCATIONAL ORIENTATION

Intention has been shown to be an integral part of a student's approach to study. Up to this point 'intention' has related specifically to an intention to study in a particular way (e.g. to memorise or extract meaning from a text). However, a body of literature exists that examines reasons for study in a broader sense.

Elizabeth Taylor and her colleagues (Taylor et al., 1980; Gibbs et al., 1984) were interested in students' reasons for attending university expressed specifically as educational orientation. This concept includes 'all those attitudes and aims that express the students' individual relationship with a course and the university' (p. 3). A basic assumption is that students are actively engaged with their study (Gibbs et al., 1984). Educational orientation is not a student trait (like motivation) but rather expresses the 'quality of the relationship between the student and the course' (p. 3). Orientation varies along dimensions of quality and quantity because students want different things from a course and attach importance to different aspects of that course, thus it cannot be assumed that students enrolling for the same programme have similar educational orientations and therefore similar expectations.

Elizabeth Taylor built on her earlier work at the University of Sussex with her colleagues at the Open University. They interviewed first year students enrolled in the Social Science Foundation Course. Comparisons were made with those studying more traditional courses (Morgan et al., 1980) on their aims, expectations and attitudes to university. Analysis of

the results identified four educational orientations, although in reality student orientations were often combined in a complex way.

1. Vocational orientation. The first orientation was particularly common among University of Surrey students enrolled in a Hotel and Catering Administration course (clearly not an unexpected result given its vocational direction). With the vocational orientation Taylor identified intrinsic and extrinsic dimensions[33]. In the former the student perceived the course as being relevant to a future career. It was part of necessary training and therefore the student was prepared to work hard on a relevant topic or task. Extrinsically, the student was working towards a qualification. The course was a means of entry into a career rather than provision of training for the future and so content had little relevance.

2. Academic orientation. The identified goals concerned academic study. Intrinsic academic orientation represented an interest in a subject for its own sake. Gibbs et al. (1984) likened this to a syllabus-free method of study in which the student wishes to study material that is outside the required syllabus. The extrinsic dimension related to a concern with educational progression, with the subject itself being of little interest and viewed by the student as providing the means to move up the academic ladder. This orientation is typically associated with signs of syllabus-boundness. Students with such a purpose often continued with a subject where they had previously experienced success (Gibbs et al., 1984).

3. Personal orientation. This form of orientation was more commonly observed amongst the mature aged students, leading Taylor et al. (1980) to comment: 'It may be that personal orientation is a feature of mature students rather than just O.U. students' (p. 21). Expressed intrinsically it reflected a desire for self-improvement (broadening). Extrinsically, personally oriented students were more concerned with demonstrating proof of their capability. As with the other extrinsically orientated students,

little concern was given to course content but rather to indications of ability such as grades.

4. Social orientation. The social orientation was found only in conjunction with the other three orientations and displayed extrinsically. One purpose of university was to provide the opportunity to have a good time. The student welcomed the expected freedom of university life and intended to participate in sporting and social activities.

Three important points emerge from Taylor's research. The first is that students within one course are likely to have a range of orientations which will affect their perception of course demands and the quality of their interaction with course content. Secondly, the results indicate that study strategies are influenced by a range of concerns that can be described as non-cognitive (e.g. concern over future employment or a desire to make new friends)[34]. The third finding and a significant one in terms of this thesis, is that Taylor and her colleagues (Gibbs et al., 1984) demonstrated links between a student's educational orientation and Entwistle's concept of approach to learning. Using case studies, Gibbs and his colleagues argued that 'concepts of educational orientation, conceptions of learning and approach to studying enable us to build up a picture of Sally Brown's world as a learner' (p. 186).

Table 1.3 shows the dynamic interaction between the concepts. For example, changes in Sally's conception of learning ('from new knowledge of different objects to understanding...broadening your outlook' p. 186) are reflected in a more consistent use of a deep approach.

Earlier research at the Open University (Morgan et al., 1980) demonstrated a relationship between the personal orientations of broadening and compensation and the meaning and reproducing study approaches. Such a relationship suggests that students' experience of learning reflects a relatively stable combination of personal factors. The

case studies used by Gibbs et al. demonstrated change over time, indicating that approach to study is sensitive to changes in conception of learning and educational orientation - a point that will be developed below.

Table 1.3 Sally Brown: a case study

Educational orientation (before the course)	Personal intrinsic - self-development gain confidence: Secondary personal extrinsic - proof of capability.
Conception of learning (before the course)	Learning as gaining new knowledge - Saljo's level 1.
Approaches to studying (during the course)	Surface approach - appeared to be attempting a more active approach.
Educational orientation (end of course)	Personal intrinsic - perceptions of gains seen as changing her approach to life.
Conception of learning (end of course)	Learning as "being critical and relating ideas to one's own experience" Saljo's level 5.

Gibbs et al., 1984 p. 186

An interest in persistence at university led Savicki et al. (1970) to examine students' role orientations. These orientations are based on behaviour preferences. Each person is described using a profile of eight orientations:

1. Vocational orientation. The student expresses a concern for acquiring skills and knowledge that will be relevant for future employment or provide the qualification necessary to gain entry to a particular career.   This orientation combines the intrinsic and extrinsic elements of the vocational educational orientation suggested by Taylor et al. (1980).

2. Intrumental orientation. This relates to participation in extra-curricular activities either as a leader, organiser or worker and reflects the student's orientation to the institutional structure.

3. Intellectual orientation. The student is interested in art and/or ideas outside the formal course context. Savicki et al. refer to interests in philosophy, art or social issues.

4. Consummatory collegiate orientation. The student is interested in the extra-curricular activities mentioned above but in the role of observer rather than participant. Thus the student is a consumer rather than initiator.

5. Social development. The student is concerned with learning about people, learning to get along with others and helping them.

6. Ritualistic orientation. University plays a minor role in the student's life with home being the focus of attention. The student tends to be tied to a relationship with his/her parents without defining personal goals. Savicki et al. describe this as a 'passive, conforming orientation' (p. 560).

7. Academic. The student is interested in the knowledge acquired within the course and with exams and grades.

8. Greek or Fraternity/Sorority orientation. This final orientation reflects an orientation towards the socialising that is a feature of fraternity and sorority culture.

The importance of this study appears to lie largely with the acceptance that students combined clusters of characteristics according to their interests and goals. Savicki et al. went on to demonstrate that a link existed between goal orientations, performance and persistence at university. There is considerable similarity with some of these orientations and those mentioned by Taylor et al. (1980). Clearly a vocational orientation is particularly significant given its importance to

students. Savicki actually found that it was this orientation that was most often related to continuing study.

Significant differences do exist between the work of Taylor and Savicki; the most obvious being the American study's emphasis on social activities. Another interesting difference between the studies is Savicki's distinction between interest in course activity and material outside the syllabus. However, the ideas mentioned fall into a 'Humanities Arts' (p. 560) area which seems to impose an restrictive limit on the range of personal interests[35]. Furthermore the interest in course material is linked to a concern with examinations and grades. No provision is made for the student who is interested in course material for its own sake (e.g. intrinsic academic educational orientation).

Vocational goals may not always have positive effects on attitude to learning. Nicholls (Nicholls et al., 1985) demonstrated that a high school student's goals were related to their views on the purpose of schooling and more significantly, beliefs about the causes of academic success (pleasing the teacher or attempting to understanding) and satisfaction with learning. Nicholls comments:

> *'The view that school should emphasize the gaining of status and wealth was associated with beliefs that success follows a commitment to beating others and teacher faith in one's ability. Beliefs that school should foster responsibility, understanding, and achievement motivation, on the other hand were linked to beliefs in the efficacy of effort, interest, attempts to understand rather than memorise, and cooperative work'.* (p 6) and *'the position that education should increase one's status and income was the most likely to be associated with academic alienation and the least likely to be accompanied by commitment to learning, satisfaction with learning in school, and plans to attend college.* (p. 7)

Apparently if vocational orientation reflects a desire to obtain a well-paid and/or high status job, the quality of learning may be diminished as is level of motivation for continued learning. It is interesting to speculate why the goal of increasing one's status and income was negatively correlated with plans to attend college (as measured on a likert scale "I will definitely go to college after I graduate from high school"). Presumably students would enrol at university if they believed it provided the means to attain their goal of money and status. Such students are likely to be classified as having a vocational extrinsic educational orientation (Taylor et al., 1980).

Broad educational orientations can be identified in both university and high school. Evidence has been presented which suggests that a student's reason for study may be related to their academic performance, attitudes to learning and general approach to learning.

CONCEPT OF LEARNING AND UNDERSTANDING

Saljo's research has established the concept of learning as being strongly related to approach to study. Saljo (1978) moved beyond a concern with describing individual study habits, or differences between individuals in terms of overt behaviour, by suggesting that a student's concept of what learning is, will largely determine the level of processing and type of strategies employed for learning. When students were asked 'What do you actually mean by learning', responses tended to fall into one of five categories (Table 1.4). While not seen as developmental stages as such, the five concepts do represent increasing levels of awareness of the active nature of learning[36]. The first three stages are summarised by Saljo (1978) as taking learning for granted. In other words, learning is envisaged as something that occurs apart from and in spite of the activities of the learner. Learning is quantitative, and occurs when an amount of knowlededge moves *en masse* from the external source, usually text or teacher, into the

memory store of the individual. The key element seems to be that the student uses rote learning strategies and does not act on the information in any way to make it personally meaningful. A main concern would be with how much time is spent, number of pages of notes taken or amount read. At the more sophisticated levels (four and five), learning has become a valid topic for reflection and in Saljo's terms has become 'thematised'. Alternative strategies are evaluated in terms of time available and task demands. It is here that the student becomes aware of the importance of context in determining approach. Thematised learning suggests a well-developed sense of metalearning and is consistent with Biggs' (1985) work on this topic.

Table 1.4 Concepts of learning

Learning was seen as:

1. ...a quantitative increase in knowledge.

2. ...memorising.

3. ...the acquisition of facts, methods, etc. which can be retained and used when necessary

4. ...the abstraction of meaning.

5. ...an interpretative process aimed at understanding reality.

from Marton and Saljo (1984 p. 52)

The key point is that learners perceive learning in terms of their activity or lack of it. There is some evidence to suggest that a student's approach to learning reflects individual concepts of learning and knowlege (Hounsell, 1984; van Rossum and Schenk, 1984). Van Rossum and Schenk used first year psychology students to demonstrate that a student's concept of learning was associated with quality of processing (deep and surface) and the resulting outcome. Twenty-five of the thirty-five students who used surface strategies when reading, held level 1 or 2 conceptions of learning. Conversely, twenty-three of the 'deep processing'

students had concepts of learning categorised as level 4 or 5. In a study designed to examine students' concepts of learning and good teaching, van Rossum and Deijkers (1984) again identified the five concepts. However, in the course of their analysis, they found that some students seemed to have an emotional commitment to learning which reflected learning as a process through which one moves towards self- realisation. They termed this sixth concept 'self actualisation'.

Marton and Saljo (1984) discussed the relation between concept and approach to learning, pointing out that the first and second concepts of learning represent the 'what' learning is and the 'how' to achieve that form of learning respectively. Concepts 4 and 5 operate in the same way with acquisition and utilisation of facts acting as an intermediate level. This last point represents a slight shift in thinking. Previously, Saljo (1978) suggested that the dividing line separated levels three and four (as discussed above).

In a later study using second and first year Arts students, van Rossum et al. (1985) made the point that they considered concept of learning to change in a developmental way. In an extension of their earlier work, van Rossum and his colleagues found support for five levels; however, they went further concluding that concept of learning was only one example of a pattern of beliefs about learning and teaching. For example, the same authors identified five categories of concepts of understanding. Students were asked 'what do you mean by understanding a text, insight into the subject matter'? (p. 621)

The first concept of understanding was illustrated by a belief that no problems or unknowns remain and so it can be passed to someone else. The second related understanding to doing well in exams with a suggestion that insight represented a further degree of intuition. Thirdly, understanding reflected application of acquired knowledge. In the fourth concept,

	1	2	3	4	5
of	• increase of knowledge	• memorizing	• "application" of knowledge • dislike of memorizing	• insight: seeking out the relationships within and between the subjects	• personal development
	• teacher-dependence	• technological view	• highly organized • limited freedom (not "too open") for students • opportunity to be literally active (busy)	• increasing need for independence • opportunity for constructive activity	• as much self-activity as possible • teacher-student dialogue • relativist teacher attitude
am	• storage of fragmentary knowledge	• memorizing almost everything – – – – – – • memorizing main issues • being able to answer (exam) questions about the subject matter	• reproduction – – – – – – • being able to apply (knowledge) • being busy with the matter	• reproduction – – – – – – • searching for connections, interrelationships, main themes, etc. (in the subject matter)	• reproduction – – – – – integration of knowledge and insight • critical, argumentative attitude
ding t	• having "understood" everything	• having "understood" everything (exam-directed) – – – – – – • a more general sense of understanding (remains vague)	• knowing in a general sense what the text is about – – – – – – • knowing the usefulness of a text • being able to apply what is learned	• directed to the author's intention – – – – – – • directed to the main line(s) of the subject matter as a whole	personal, critical, constructive use of study materials
n	• being able to answer (exam) questions	• being able to answer exam questions	at exams (now) • reproductive use of knowledge in practice (future)	• constructive/flexible use of knowledge (immediate)	• problem-directed use of knowledge (heuristical)
ive	• intentional (= exam-directed) learning – – – – – – • incidental learning or learning nothing	• long-term memorizing – – – – – – • short-term memorizing (exam-directed)	• literally being active (busy) being able to do something with the subject matter – – – – – – • reproduction	• deep-level approach • learning "more" than is expected (constructive) – – – – – – • surface-level approach • compulsory learning (doing exactly what is expected)	• critical, responsible attitude – – – – – – • surface-level approach • passive deep-level approach

eme of the development in students' conceptions and actions.

understanding was 'seen as tracking down what the meaning of a text is, what the author intends; insight concerns the forming of interrelationships within and between the subjects and, through this, getting an overall picture of the subject matter' (p. 632). The fifth and final concept illustrates an ability to personalise the material. Understanding and insight are both part of active learning. Table 1.5 illustrates the interaction of the concept investigated by van Rossum et al. (1985 p. 639). This study provides confirmation of the association between all aspects of learning, teaching and assessment.

As the van Rossum study was not a longitudinal one, it was not able to demonstrate change within individuals and therefore did not chart the transition of one student from novice to expert. The question still remains as to the nature of this developmental process and the form it takes in different students. For example, is there any interaction with approach to learning?

From the work on concept of learning it seems likely that students who are aware of their role in determining the quality of learning are better able to adapt to the demands of the task in a strategic way. Unfortunately individuals who see themselves as passive recipients of bodies of knowledge are likely to respond using surface strategies even when these are inappropriate to the demands of the task. Gibbs (1981) has acknowledged this problem by taking account of a student's conceptualisation of learning demands before attempting to improve a student's study strategies. Such an approach demonstrates the importance of examining an individual's interpretation.

CHANGE OVER TIME

The discussion so far has focused on a number of personal factors that appear to be influential in determining a student's approach to learning.

It is clear that approach and indeed the more enduring orientation to study are not fixed. The purpose of the following section is to examine the literature that is directed at intellectual development and more specifically, changes in students' orientations to study.

INTELLECTUAL DEVELOPMENT

Much of the research in this area has examined the personal and social development of university students (e.g. Feldman and Newcomb, 1969; Astin, 1977). Relatively little attention has been directed specifically towards intellectual development defined here as an individual's increasing ability to make use of a range of complex learning strategies.

In addition to developing specialist knowledge and skills, university education also aims to encourage critical and independent thinking (Percy and Salter, 1976; Sprague, 1984; Hawke, 1988). Increased demands for accountability (Watkins and Hattie, 1985) have meant that universities must be able to demonstrate that graduating students actually develop these processing skills. Perry's work has been significant in this field (Perry, 1981). In an intensive interview study over a period of four years[37] Perry suggested that students move through nine stages of intellectual and moral development. Transition from dualism to relativism is by no means automatic and movement from stage to stage is painful, causing the student intense anxiety and uncertainty. It can be encouraged by a combination of teacher understanding and challenge.

Perry's scheme has been linked to concept of learning (Saljo, 1978). More recently the similarity is closer following van Rossum's (van Rossum et al., 1985) suggestion that concept of learning may be developmental. However, Perry and Saljo differ on their views on impetus for change. According to Saljo, change is a function of experience involving an interaction between the individual and the context while Perry (1970) suggested that change occurs as the result of an internal drive.

Saljo (1978) noted three steps in the developing awareness of the learner.

1. A student becomes aware of the influence of context in learning and develops a strategic approach. This may relate to Biggs' (1985) comments about differences in situational awareness (see p. 42)

2. A student comes to differentiate between 'learning for life' and 'learning in school'.

3. Learning is differentiated from understanding where rote learning is contrasted with meaningful learning.

Saljo puts forward the idea that learners gradually become more aware of learning as a valid subject for reflection, but does not give details about patterns of change observed in individual learners.

Schmeck (1983) has suggested that Perry's dualism and concept of relativism and commitment are related to a surface and deep approach of learning respectively. If students do develop in the direction suggested by Perry, there should be a progression from surface to deep learning strategies. According to Schmeck this may be due to developmental level imposing some kind of limit on the level of processing the student can master. Unfortunately, horizontal *declages* present problems for Perry's framework (Wilson, 1981) and it appears that factors such as content and context must be considered to enable explanation of subject area and even task differences much in the way the SOLO taxonomy does (Collis and Biggs, 1979).

Terenzini et al. (1984) attempted to identify institutional factors that directly affected the development of academic skills such as obtaining factual knowledge, critical and analytical thinking, learning how to learn and problem-solving. In general, the pattern of reported growth was stable over three years although individual students described unique patterns of development (some reported rapid changes during the first year and others

could be labelled 'late bloomers'). While course involvement[38] was significant in influencing skill development across all years, some factors were more significant in one or other year of study. For example, the amount of time spent interacting with staff was more important in the second and third years[39].

A major problem facing developmental research is the difficulty of attributing development to the effects of the institution rather than the normal process of development. Studies like that of Terenzini et al. (1984) have attempted to overcome this problem by specifically focussing on institutional characteristics.

ORIENTATION TO STUDY

A possible association between intellectual development and changes in orientation to study was suggested by Schmeck (1983). However, little longitudinal research has been directed at identifying changes in orientation and thus patterns of change are still unclear.

Watkins and Hattie (1985) followed one cohort of students from their first to third year of study, reinforcing psychometric methods with interview data which investigated the factors that influenced student approach to learning and the effect on the quality of learning outcome. In common with Schmeck and Grove (1979) and Sprague (1984) they predicted movement from surface to deep strategies. Some of Watkins' earlier research (e.g. Watkins, 1982a) pointed to inadequately developed learning strategies in younger students. Using the ASI, Watkins and Hattie (1985) found that students' dimension scores did change over time but not in the expected direction. Deep learning scores decreased while surface learning scores increased. The changes were largely independent of age, faculty or gender. Interviews with third year students suggested greater feelings of disillusionment and cynicism 'about the value of tertiary study' (p. 137) and increased scores on negative attitudes to study. This latter finding was

supported by the earlier work of Wieneke (1979); as Watkins said - not very encouraging findings[40]!

In an earlier study, Watkins (1984) noted contrasting patterns of change in students who tended to use deep and surface approaches to learning. Most of the students in the sample reported that learning at school and university was different. However, students who commonly used a deep approach referred to qualitative changes (changes in the way students learnt and how they thought about what they were learning). In contrast, a surface approach was associated with references to quantitative change (amount of effort expended). With the exception of Science students, a similar pattern of change was reported by the majority of the second year students following their transition from first to second year study[41]. In addition to changes in strategy, students also referred to a perceived need to become more independent in their learning. Individuals who usually used a deep approach (predominantly those in the Arts faculty) were aware of the need to develop their own views although students did express some caution for example:

> *'In English you can express opinions but you must back them up so it has made me cautious. I question my own opinions. I've been marked down for abstract opinions so I feel opinions are moulded at Uni rather than being cultivated. English tends to say 'There is a definite response and there are no more whereas in History I don't feel crammed in so much'* (Younger arts male in Watkins, 1984 p. 47)

Biggs (1982) did not find significant change in motivation over three years' study at university. However, as the study was cross-sectional, lack of significant difference between students in their first second and third year of study may have been a function of the student groups. Biggs in fact expressed doubt that change would be in the surface-deep direction unless

accompanied by increased cue awareness resulting in a perceived need to change. Support for the role of metacognition is given by Biggs' subsequent work (Biggs,1985; 1988).

LEARNING CONTEXT

In the previous section it was argued that students possess a preferred general orientation to study that is associated with enduring traits such as learning style, personality and motivation. A considerable body of research literature exists that suggests that students are aware (to varying degrees) of contextual demands and adopt an approach to study that they *perceive* to be most appropriate (Svensson, 1977; Laurillard, 1984; Biggs, 1985; Ramsden, 1985). For example, Ramsden (1985) argued that contextual factors not only directly influence the employment of a particular strategy but are also associated with orientation changes. This section examines these issues in more depth.

Much of the contextual research originated from the theoretical perspective of Karl Lewin (1936). According to Lewin, one cannot derive laws of behaviour without consideration of the situation in which the person operates. An individual's environment does not serve 'merely to facilitiate or inhibit tendencies which are established once and for all in the nature of the person' (Lewin, 1936, p. 12). Lewin argued that behaviour is the result of an interaction between environmental elements and the person and called for clear statements about this interaction. Further he commented that the influence of either component is likely to be greater or lesser for different 'psychological events' (p. 12)[42].

To what extent do factors in the context of a course affect a student's actual learning strategy? Ramsden (1979, 1981, 1982) has devoted considerable attention to this question, defining course context as 'the teaching, course organisation, subject areas, and assessment methods of

university departments' (Ramsden, 1979 p. 412). It is also the 'location of a specific task within the background knowledge and interests of the student' (Ramsden, 1979 p. 420). Unlike the British students studied by Ramsden, New Zealand students enrolled in general degree courses, are likely to experience a wider range of departmental contexts than their British counterparts who tend to study within one department (Wilson, 1981; Ramsden, 1985)[43]. Potentially at least they will need to make a greater number of adjustments to varying demands.

Ramsden (1979) used the Course Perceptions Questionnaire in combination with student interviews to investigate the degree to which students' approach to study was influenced by departmental context. The second year students used in the study constantly related contextual variables to the approach they took to learning and the level (deep or surface) at which a specific task was tackled. (Entwistle and Ramsden, 1983). The departments chosen represented a range of disciplines (arts, Social Science, Physical Science, Applied Science and Independent Studies.) Unfortunately students from the less 'scientific' Social Sciences (e.g. Sociology and Anthropology) were not included nor were those from Biological Science.

Ramsden's study pointed to contextual differences between university departments which suggests that students tend to adopt different strategies to suit the perceived contextual demands of each department, including factors such as teaching style, subject matter and type of assessment (Table 1.6). Significantly departments appear to create particular contexts that can encourage different learning orientations (Entwistle and Ramsden, 1983). It is significant to note that context directly influences the general orientation to study and the specific approach used in individual tasks (Ramsden, 1985). In arts subjects a deep approach was consistent with interest and personal meaning while in

science departments previous knowledge was more significant. Entwistle and Ramsden (1983) concluded that students with different styles of learning are attracted to different subject areas. Biggs (1985) found that a student's general orientation becomes more pronounced at the end of three years of study.

Table 1.6 Dimensions of learning environments derived from Course
Perceptions Questionnaire

Openness to students	Friendly staff attitudes and preparedness to adapt to students needs
Social Climate	Frequency and quality of academic and social relationships between students
Formal teaching methods	Formality or informality of teaching and learning (e.g. lectures vs individual study)
Clear goals and standards	Extent to which standards expected of students are clear and unambiguous
Workload	Pressure placed on students in terms of demands of the syllabus and assessment tasks
Vocational relevance	Perceived relevance of courses to students' careeers
Good teaching	Well prepared, helpful committed teachers
Freedom in learning	Amount of discretion possessed by students in choosing and organising academic work

From Ramsden, 1979 and Entwistle and Ramsden, 1983

Laurillard (1979; 1984), investigated the approaches taken by science students to several of their normal academic tasks. She concluded that 'approach derives from their intention — why they are doing it and what they

expect to get out of it' (p. 134). Intention itself reflects a combination of personal and course related factors such as form of assessment, perception of the marker's requirements and previous experience. It was therefore unlikely that students would consistently have the same intention when studying in different situations[44]. Laurillard's work is important in that it demonstrates variability between tasks.

Further evidence of the role of context comes from the work of Brew and McCormick (1979) who used an illuminative research method[45] to evaluate an Open University course that had been implemented in a university Electrical Engineering department. While students' ability to implement effective strategies was a significant factor in determining learning outcome, Brew and McCormick (1979) concluded that the course material itself had a direct effect on student strategy. For example, the Open University used 'a closely argued text which spells out particular relationships and assumes a particular sturcture to be learned' (p. 437). This made it difficult for students who wished to use a deep active approach. Student C expressed the problem as follows:

'...besides it's very rigid ... When you read through a unit you more or less stop at a level and you don't go any further until you reach the next unit. You don't really develop the way you want to develop it' (p. 437).

Brew and McCormack argued that student's style of learning did not inevitably result in a particular kind of learning as task restrictions limited the kind of strategy that could be used effectively.

Barrett and Wieneke (1979) identified an intrinsic interest perspective along with the much more common instrumental view displayed by adaptation to assessment requirements. They noted that these perspectives paralleled the deep and surface approaches of Marton and Saljo although the specifically avoided reference to processing as their data was not sensitive to such activity. Barrett and Weineke demonstrated that while

students commonly enrolled in the course with one or other of the perspectives, in some cases context was a significant factor in perspective change[46]. The study is an interesting one in that it demonstrates once again the interaction between personal characteristics, such as cognition, and motivation and contextual factors. It appears that the level of the strategy used to undertake a particular task depends largely on the influence of perceived contextual demands.

More recently Biggs (1985) demonstrated that personal and situational variables differentially affect learning approaches. He argued that students who tend to use surface approaches are more likely to be influenced by context than those who use deep or achieving approaches.

> 'Motives are considered as being prior to strategies, and as springing in part from the individual's personality structure and in part from situational pressures. Strategies are envisaged as arising out of motivational states in accordance with task demands...Deep approach has the closest links with personality factors... Achieving approach is slightly further from the personological and closer to the situational...Surface approach is the most susceptible to situational pressure' (p. 202).

From Biggs' data it appears that the interaction of personal (e.g. metacogntive awareness) and contextual factors operate differently depending on a student's approach to study.

Support for Biggs' findings comes from Fransson (1977) who noted that students who felt threatened by a situation were more likely to adopt a surface approach. Fransson's research demonstrates the importance of taking account of students' perceptions of course attributes (e.g. interest) as opposed to the expectations of the researcher. Fransson (1977) acknowledged the inaccuracy of his own estimation of the degree of interest particular students would have in reading an article on the examination system of the Institute of Education. Some Sociology students rated as

likely to have little intrinsic interest in the paper were in fact interested in such material. On the other hand, some of the supposedly intrinsically interested group (Education students) did not feel this way.

The greater significance of context in the surface approach explains why it is easier to create a surface approach than a deep one. Marton and Saljo (1976b) interspersed surface and deep level questions in the text and found that students reading surface level questions (factual questions) consistently adopted a surface approach whether or not they routinely used this level of learning. Inserted deep level questions gave inconsistent results. One group of students 'technified learning by trying to fulfil only the most explicit demand - the recalling and summarising the text in one or two sentences' (p. 121). The second group used the questions as an indication of what would be tested and adjusted their learning approach accordingly (not always successfully).

Ramsden (1985) concluded that 'both styles of learning and approaches to learning are intimately related to the assessment and teaching context' (p. 59). He suggested that learning context operates at four levels.

1. Learning task. If the student perceives the task to be of interest and relevance they will be more likely to adopt a deep approach. Similarly, a task that requires memorisation and/or extrinsic motivation will result in a surface approach (Watkins, 1984).

2. The lecturer or tutor. The characteristics of the teacher (e.g. positive attitudes, enthusiasm and 'good' teaching practices) will have an effect on students' approaches to study.

3. Department or course. Ramsden (1985) pointed out that departments or courses usually influence approach in a negative way. Assessment that demands reproductive answers, heavy workload, and few opportunities for

independent work encourages students to adopt a surface approach (Entwistle and Ramsden, 1983).

4. Institutional. Work by Biggs (1982) and Taylor et al. (1980) has suggested that students at different institutions may have different value systems and reasons for study. For example, the mature aged students in Taylor's study were more likely to be personally oriented than the younger students at Sussex University.

Results obtained by Becker et al. (1968) pointed to the dominating effect of the university environment in shaping particular goals and values. Although Becker's work was more concerned with the whole university environment than the influence of courses or individual tasks, it demonstrated the influence of context on a more general orientation to learning. They found that student learning was largely determined by the grade point average students wished to obtain, noting that grades had become the predominent currency in the reward system of the institution. To achieve the desired grade, students conformed to the often hidden curriculum[47] (Snyder, 1971) which may run contrary to that set out by staff in statements of course objectives. It would be unfair to state that Becker and his colleages assumed that all students were totally preoccupied with grades and in fact some students did have other concerns although pursuit of these goals was generally in addition to the pursuit of grades. Two alternative perspectives were identified: the professional perspective, where students were willing to put effort into activites that were perceived to be useful in later life, and the liberal arts perspective in which some of the 'brighter' students saw university as the opportunity to broaden their outlook and undertake interesting courses. These perspectives seem to include features similar to the educational orientations of Taylor et al. (1980). The point made by Becker and his colleagues was that students were not initiators of their actions but responded to the perceived reward

system offered by university staff. While this view is not consistent with the perspective presented here of the learner as an active participant and director of learning activity, Becker's work does highlight the influence contextual factors have on general orientation to study.

The authors of early American studies such as that by Becker et al. (1968) tended to make generalised statements about the way in which students actually set about learning without making distinctions between types of students or various departments. Miller and Parlett (1974) suggested that not all students are equally effective at picking up these messages, some, the 'cue deaf' are not even aware that such hidden messages exist, attributing success to hard work alone. The 'cue aware' realise the existence of cues but do not set out to 'play the game' in a conscious way. According to Miller and Parlett it is the cue seekers who actively seek out staff and latch on to subtle clues given in class. Some students then are likely to be more aware of the 'hidden curriculum'. Do factors such as orientation to learning (Entwistle et al., 1979), educational orientation (Taylor et al., 1980) and study motivation (Biggs, 1978) influence the nature of perception that students form of their context? It may be possible that an interaction exists between level of awareness of the hidden curriculum (Snyder, 1968), metacognitive awareness (Biggs, 1985) and the contextual demands. If this were indeed so, it would highlight still further the importance of taking account of student perception in research design.

Wilson (1981) rejected earlier studies that suggested a linear relationship existed 'between entry characteristics and academic performance' [46] (p. 20), and incorporated the academic environment into his view of the learning process. The important point seems to be that students will perceive the demands of a course in different ways perhaps depending on the degree of cue awareness and factors such as general

orientation to learning and goals and concept of learning. Extending the point made by Ramsden that cue-seeking students behaved differently in different departments, one could suggest that such personal dimensions influence actual perception of demands and thus the actual strategy used. Context may intervene into an already complex interaction between goals, orientation and awareness to determine approach. Whether or not the student actually engages in deep level learning will ultimately depend on an interaction of the personal factors discussed above.

It has been argued that not only does context directly affect the particular strategy a student will use in any one situation but it also acts in a more all-embracing way to influence a student's general orientation.

Ramsden's detailed analysis of the learning context identified a number of factors (Table 1.6) all of which are influential in shaping the learning approaches of students. With these factors in mind it is therefore necessary to examine each in more detail.

STAFF

Student perception of the attitudes, teaching methods of the lecturer and relationships between staff and students are key contextual variables affecting student response according to Ramsden. Students see characteristics such as teacher enthusiasm and commitment as affecting their learning 'above all, students value an environment in which their teachers make genuine efforts to help them learn' (Ramsden, 1979 p. 425).

Apart from personal factors in teaching style[49], other areas of importance are likely to be perceived teacher expectations (i.e. standard and nature of work expected). It does appear that the way material is presented in lectures is important in determining the kind of learning activities students subsequently engage in. Particularly important is a lecturer's ability to present material at the student's own level - providing clear links with the student's existing framework - if meaningful learning to take

place. Hodgson (1984) used stimulated recall in an effort to discover what students were doing and thinking and more particularly the reasons behind this. Some students were more influenced by the actual presentation than others. These 'vicarious' students either gained stimulation from the lecturer's own interest and enthusiasm or related to an experience the lecturer described. Two other groups of students perceived the material in terms of their own concerns. The first thought of the material in extrinsic terms with no indication of any creation of personal meaning. Lecture material was relevant either as being useful for assessment or just because the lecturer has written it on the blackboard. The second group of students did engage with the material in a personal way, fitting it into their own experience or interests. Of particular significance was Hodgson's finding that the way in which students made material relevant affected their level of processing. Furthermore, an interaction appeared to exist between relevance, personal factors such as general (educational) orientation, and previous knowledge and course context.

Brew and McCormick (1979) distinguished two principal forms of lecture presentation, the 'iceberg' form in which only a proportion of the whole is revealed with the expectation that students will follow up for themselves and the 'whole story' which is complete in itself. Students and lecturers did not always agree on the form of lectures. This was most obvious where lecturers thought they were presenting the 'tip of the iceberg' in lectures and some students saw it as the whole thing. Other factors of significance might be the size and form of the reading list, and the style of the text book which may or may not lend itself to efficient study strategies.

Ramsden found that approach to learning was also influenced by the degree of structure in a course, and the emphasis given to teacher-directed as opposed to independent learning.

Staff attitudes, presentation and course organisation do appear to affect quality of learning. However, the data presented here suggests that a student's own approach to learning will have some influence on the degree to which staff influence their learning. As Hodgson demonstrated no matter how lively and relevant the lecture presentation may be, some students will not make the content personally meaningful and in some cases will miss the point completely.

ASSESSMENT

Assessment is also a key element in the learning context and as Becker et al. (1968) and others since have demonstrated (e.g. Elton and Laurillard, 1979; Crooks, 1988) it often plays the major role in determining the learning strategies students will use[50].

Assessment itself refers to the assessment programme (internal assessment or final exam), the task itself (essay, multichoice test, limited time exam etc) and the degree of flexibility available to students in terms of question choice and components and weighting given (e.g three essays and practical work all worth 25%) as well as the way work is marked in terms of criteria and consistency. When all these factors are taken into consideration, students are faced with a range of options and possible responses.

The influence of assessment on level of processing may be particularly marked in extrinsically motivated students (Fransson, 1977; Ford, 1980). Ford argued that certain learning strategies and orientations to learning lead to a 'relative preoccupation with short term factors' at the expense of a 'lack of internalisation and subsequent interest in the task' (p.152). The impact of the assessment can be demonstrated in that it often measures what the students *do* do rather than *can* do. In a later paper, Ford (1981) takes this statement a step further by writing: 'a principal determinant of the type and quality of a student's learning may be the way

in which the work is assessed' (p. 372), particularly for the more extrinsically motivated students. Although Ford makes his comments in the context of a review paper, his views have been supported by the research work of Fransson (1977) discussed above.

Miller and Parlett (1974) on the other hand, did not find any evidence to suggest that extrinsically motivated students were more likely to cue seek; apparently some of the students actually 'played the examination game' more in courses in which they were especially interested. Awareness of the hidden curriculum may be more closely associated to concept of learning, metacognitive skills or as Miller and Parlett suggest, intellectual development (Perry, 1970). The link between cue-seeking and interest is rather unexpected and suggests that the links between intrinsic motivation and assessment need further investigation.

The way work is marked also seems to have an impact on learning strategies. Ford (1981) briefly mentions work done by Deardon, who found that changing the way laboratory books were marked brought about changes in learning behaviour that could not be induced from alternative teaching methods. Unfortunately, it is not clear whether the changes made were in terms of rewarding understanding rather than rote learning or weighting of marks or nature of feedback although Ford's argument suggests the former. More specifically, Watkins (1982a) found that assessment by essay encouraged students to adopt a deep level approach to study.

One possible explanation for the suggested relationship between form of assessment and level of processing, may relate to organisation of material in memory. Anticipated demands are likely to affect the way material is stored. It is the strategy employed to organise material for storage that is likely to determine the quality of processing and the form of stored information. Therefore, the anticipation of a certain form of assessment and marking will influence the student's approach to study.

The timing and nature of feedback is also likely to affect future learning, however with the exception of Entwistle (1981) few researchers have given this factor any detailed consideration[51]. Gagné (1985) emphasised the importance of informative feedback with the assumption that students are then able to modify their performance.

WORKLOAD

Workload appears as a significant contextual factor influencing the quality of learning (Ramsden, 1979) (Table 1.6). A heavy workload does seem to be associated with a surface approach to learning although it would appear that this is in combination with a failure on the part of departments to allow students freedom of choice in content and teaching method (Ramsden, 1984). Not surprisingly, Watkins (1981) found that at least for science students whose course commitments included laboratory sessions, a heavy workload limited the time they were able to spend on study. The range of outside responsiblities of mature aged students appeared to limit both the quantity and quality of study. Younger students also have a range of commitments (family, work and/or social) Conversely Watkins (1984) found that students were more likely to adopt a deep approach to learning if they were allowed time to think about a topic[52].

The interpretation of 'heavy workload' appears to imply that students perceived the demands to be stressful; a point that would be consistent with Fransson's (1977) finding that a surface approach was more likely to occur if students were anxious. However the definition of 'heavy load' is likely to differ between individuals. An individual's enthusiasm may lead him/her to far exceed the workload expectations of the staff member running the course (Watson and Willis, 1984). There is also likely to be an interaction between course work and other responsibilities. Svensson (1977) argued that time spent will be preceived differently depending on approach to learning. Students using a surface approach are more likely to

find learning 'boring, irrelevant' (p. 242) given the long hours necessary to memorise course material. Novak (1977) also suggested that rote learning was ineffective and that students using such a strategy would need to re-learn the material which clearly increases student workload.

Considerable research energy has been devoted to documenting the amount of time students spend on their study. These studies are notable chiefly because they highlight the differences between students (e.g. Hunter, 1979; Paxton, 1976). A study by Clift and Thomas (1973) detailed the factors that contributed to perceived workload problems such as clashes in the due dates for assignments.

The important question to examine here is the effect workload has on student attitudes and quality of learning. In an assessment of commerce faculty workload at the University of Canterbury, McKay (1983) found little association between workload and course satisfaction. Other factors such as frustration (from too many topics and excessive coverage), boring content and two-hour lectures were more likely to contribute to low satisfaction (Watkins,1982a)

SUBJECT MATTER

The conscious adoption of distinct learning strategies for work from different departments may also be related to subject matter differences. Biggs (1976) pointed to the possibility that certain strategies suit subjects in the Arts faculty more than Science and vice versa. However, Biggs only used students from English and Chemistry departments to support his claim and a more complex picture might emerge if one were to add subjects from a wider range of departments. Hajal (1972) distinguishes formal from descriptive knowledge. Formal knowledge is contained in subjects such as Mathematics and Chinese where the accumulation of knowledge is progressive. Descriptive knowledge is found in subjects such as History where it is possible to move from topic to topic with similar levels of

ability. Because of the complex nature of subject matter at university, such a distinction may be overly simplistic, although it does point to the possibility that students studying different subjects or enrolled in different faculties might need to employ different strategies to cope with the demands of various forms of knowledge in addition to a strategic response to specific contextual demands such as assessment.

Ramsden (1984) focused on students' perception of different kinds of learning arising from different subject areas. The most noticeable difference was that between Arts and Science subjects. In Science, learning tasks 'are typically described as hierarchical, logical, heterogenous and rule and procedure governed' (p. 156). There seemed to be agreement amongst students that Arts subjects provided more opportunities for self-direction, required interpretation and were not as difficult as Science subjects as students were better able to 'fudge' areas where they did not fully understand. These differences parallel operation and comprehension learning (Pask and Scott, 1972). Like Pask, Ramsden made the important point that efficient learners must make appropriate use of both styles.

One of Ramsden's most interesting findings was that deep and surface approaches were expressed differently in different disciplines. The standard description of the deep approach as an attempt to manipulate and integrate information fitted the Arts area, but, in science, deep processing began with a concern for detail. For Science students the surface approach represents an overconcern with techniques and scientific method. Arts or Social Science students with a surface approach do not integrate details or are superficial in their analysis of their reading. However, as mentioned above a wider range of disciplines needs to be investigated before one can say that certain approaches to study are commonly found in Arts or Science subjects.

CONSOLIDATION OF PRIOR KNOWLEDGE

The degree to which material presented in courses links with information already stored by the student, thus affecting the quality of learning is compatible with any theory of active learning in which the emphasis falls on prior knowledge as a framework for the integration of new material. (e.g. Ausubel, 1968). If deep processing is to take place, the student must be able to form meaningful relationships between new and existing concepts and principles. Sheen (1974) makes this point when referring to reading strategies. He states that when reading is used as a 'tool to acquire knowledge, it is relatively ineffective unless it is accompanied by thinking'. Thinking is of a critical nature and the reader at the same time 'uses his accumulated experience and knowlege to understand what he encounters for the first time' (p. 16).

The influence of prior knowlege on understanding was demonstrated by Voss et al. (1983) who found that whilst novice political scientists could understand discrete items of information, they were not able to cope with large bodies of complex material. On the other hand, experts were able to achieve understanding at a high level of abstraction by using qualitatively different methods to solve a problem.

This point appears to be a key factor in the distinction between novices and experts in a range of fields (McGaw, 1984). In a review of the literature, Ford (1981) argued that prior knowledge must exist in storage at a similar level of complexity to the new material if it is to aid understanding. This principle is incorporated by Ausubel (1968) into the concept of advance organisers.

A link appears to exist between a student's prior knowledge and level of processing. Collis and Biggs (1979) see a certain level of background knowledge as essential if the student is to operate at the extended abstact level of their SOLO Taxonomy. Given the hierarchical nature of knowledge

in the science field it is not surprising that Ramsden (1979) found that background knowledge had more impact on the level of processing of Physics students than those in the History or English departments.

PEERS

Ramsden (1979, 1981, 1982) does not discuss peers as a significant influence on learning approach. Whilst acknowledging the influence of staff in defining a particular learning context the role of peers should not be ignored.

Some learning programmes have successfully incorporated peer tutoring (Goldschmid and Goldschmid, 1976; Rudduck, 1978; Smith et al. 1986) and are based on the assumption that the depth of student learning increases when students are required to teach material to others or engage in leaderless discussion. Smith et al. (1986) used senior students as tutors. The first year students reported that the student tutors developed a 'facilitative' climate and perhaps because of their close links with the material in terms of having experienced it shortly before, were more understanding and gave their students opportunites to express themselves. According to Fransson (1977) these conditions should have enouraged deep level processing. Benware and Deci (1984) found that students instructed to learn from an article in order to teach the content to another student, had higher conceptual understanding scores than students who had been instructed to learn for an examination (form of examination was not made clear). However, the two groups did not differ on rote learning score. This provides further evidence to suggest that a link exists between depth of processing and teaching the material to someone else. The work of Benware and Deci tends to suggest that it is not the act of teaching that makes the material more meaningful, but the intention of the student when learning.

There is some evidence to suggest that the influence of peers is greater in areas of university life away from the cognitive sphere.

Certainly, anecdotal material gathered by Wilson (1966) suggested that students themselves attributed changes in personality development, world view and personal philosophy to peer influence. Tinto (1975) has suggested that fellow students play a key role in the integration of the student into university life and similar findings have been produced by studies describing groupings of students be they sub-cultures, as claimed by Clark and Trow (1966), or types of student (Feldman and Newcomb, 1969).

More specifically Parlett and King (1971) were able to demonstrate that identification with other members of class in conjunction with the enthusiasm of the lecturer, influenced the amount of work done in the course and the attitudes to learning. This improvement seems to have come largely from students feeling more relaxed with their colleagues and less afraid of showing their ignorance by asking questions.

Apparently, interaction with peers both within and outside a course is likely to affect a student's attitude and response to university as a whole and perhaps learning behaviour within a course. This can occur at an academic level, either informally or formally as discusion about content or assessment requirements. Alternatively, peers may give each other emotional support directed at alleviating the pressure of course or social demands.

In conclusion, the main points from this section are firstly that the departmental context plays a significant role in creating a climate conducive to deep or surface approaches. Secondly student approaches to study do not arise as passive responses to personal traits but as the result of a dynamic interaction with all the components of the learning environment (e.g. Fransson, 1977; Laurillard, 1978; Ramsden and Entwistle, 1981) and metacognitive awareness (Biggs, 1985). Because the way a student learns is not fixed, teachers do have to take some responsibility for

the environment they help to create and therefore the quality of learning that results.

CONCLUSION

The major focus of this chapter has been the interaction between personal factors such as educational orientation and concept of learning and those in the learning context (e.g. assessment requirements, workload and teachers). In general terms this interaction contributes to a student's perception of course demands which affects both their general orientation to study and the more specific approach.

The relationship between these personal and contextual factors is ongoing, reflecting changes in student objectives and attitudes as well as in the contextual elements. This is well represented by Entwistle (1981) who included a feedback loop in his model of factors influencing the learning process in recognition of the fact that while the model 'implies a certain consistency...the model emphasises the way experiences from the particular task may alter the learner's characteristics' (p. 248).

The view of student learning described above has developed out of research that is primarly interested in the learner's perception of actual learning tasks and experiences. The work of Biggs is significant here as he has not only provided further evidence for the existence of approaches to learning but he has also argued that students apply different levels of metacognitive awareness to their learning. Biggs (1985) has shown that students adopting a surface approach are more likely to be influenced by contextual factors than those using a deep approach.

A major contribution of the approach to study literature has been to emphasise the importance of understanding as a learning outcome. Marton and Saljo (1976a;b) demonstrated that not only is it possible to identify qualitative differences in learning outcome but one can show that the

quality of the processing is directly related to the quality of the outcome. However, further work in Sweden (Saljo, 1978) and in Holland (van Rossum et al., 1985) has indicated that terms like 'learning' and 'understanding' are not fixed. Students form personal concepts of these terms which may be a function of intellectual development and metacognitive awareness.

It appears that learners arrive in any learning situation with a range of previous experiences, intentions, and concepts of learning. These affect their perception of the learning context (e.g. a person who sees learning as the acquisition of a body of facts will view the role of lectures differently to someone who sees learning as the active creation of meaning). The interaction of these factors influences students' general orientation to learning and their specific approach. It is important to note that approach is not solely concerned with cognitive input. As argued by Ford (1979) and later by Entwistle and Ramsden (1983) and Schmeck (1983) the deep approach can be applied on two levels. The first is cognitive, but the second involves a search for personal meaning which according to Ford has important implications for the development of positive attitudes to continued learning.

The implications for course design and teaching practice are considerable. In the first place it is clearly established that it is too simplistic to talk about 'good' and 'bad' learners. The effectiveness of particular learning strategies is determined by factors such as prior knowledge, learning skills and metacognitive awareness. Ability to match approach to demand is likely to have positive results in terms of academic achievement. Teachers also need to be aware that students do not all have the same intentions (i.e. to gain high grades). Students are able to give general reasons for their enrolment at university (educational orientation) and it is also likely that specific reasons for studying particular courses vary from course to course and individual to individual.

A concept that has been briefly mentioned in relation to an orientation to meaning, positive attitudes to learning and a positive perception of the learning context is involvement in study (Ramsden, 1984). The following chapter examines the literature on involvement in order to develop the current rather poorly developed link between involvement and approach to study.

NOTES

1. For a discussion of the contribution of cognitive psychology to the understanding of learning see Shuell (1986)

2. The structural aspect of memory refers to the hierarchical organisation of storage sites such as short term and long term memory (Norman, 1976).

3. In an early study, Bartlett (1932) was able to demonstrate that learners actively reconstructed narrative that they had been asked to memorise. However, Bartlett's results appear to have been an artifact of the unusual nature of the story he used (Zangwill, 1956) and the use of repeated recall tests (Kay, 1955). Kay found that reconstruction was significant in the recall of material that has 'all too obviously been lost' (p. 95). However for material remembered over a short time period 'it was necessary to give more weight to the interactive processes which have taken place on the initial perception of the material' (p. 96).

4. Bower and Clark (1969) investigated the effectiveness of chaining (constructing a narrative around significant words) on subsequent recall. Students were presented with 10 unrelated nouns and were either instructed to learn them (control) or given instructions on the chaining technique before commencing their memorisation. The researchers recorded length of study time as well as number of words recalled over lengthening time periods.

5. The term 'phenomenographical' research was adopted by Marton to describe an approach that attempted to gain an understanding of learning from the perspective of the learner. This 'second order' perspective made use of description and interpretation rather than the prediction and control of the 'first order' or traditional methods of research. Marton's research methods are discussed in more detail in Chapter 3.

6. Marton and Saljo (1976a) describe the article as follows 'The newspaper article was 1,400 words long and included three tables. The article was mainly a critique of the approaching curriculum reform in the Swedish universities (UKAS), which aimed at bringing studies more into line with those at the polytechnic institutes through the introduction of set combinations of subjects and stricter regulations as regards duration of studies (termination in the case of unsatisfactory examination results). The reason for the reform, as explained by the authorities, was that the examination pass rate at the universities was considerably lower than that achieved at the polytechnic institutes. The author of the article, had, after examining the underlying statistics, divided university students into subcategories and was thereby able to show that, even though the pass rate was very low for certain categories of students, for other categories it was as high as, if not higher than, that achieved by technical students. The author argued that the blanket approach of the university reform, which would affect all equally, was misguided. If the pass rate was to be raised (and this was not considered self evident by the author) selective measures should be taken by concentrating on those groups that did have a low pass rate'. (p. 8)

7. Dahlgren (1984) describes replications of the original research that have allowed students to work at their own pace.

8. For a detailed description of Marton and Saljo's analysis of interviews refer to pages 129 and 148.

9. Other attempts ; e.g. Bloom's Taxonomy (Bloom, 1956) and the SOLO Taxonomy of Biggs and Collis (Collis and Biggs, 1979) to measure the quality of learning outcome have, according to Dahlgren (1984) not been sensitive to 'differences in outcome which are bound up with the specific content of a particular learning task' (p. 29).

10. Concept of learning is discussed in detail on page 29.

11. According to Saljo, (1978) students for whom learning has become 'thematised' are able to rationally consider the demands of various tasks and select the most appropriate strategy. Unfortunately, some students are restricted to the use of surface level processing. It is interesting to note that this limited approach is not attributed to low ability but rather the influence of contextual factors such as assessment (Marton and Saljo, 1976b).

12. Marton and Saljo do not give details to explain their theoretical position. It may reflect their particular interest in an individual's

unique learning and their concentration on specific outcome space, rather than an attempt to identify general principles of cognitive functioning.

13. Pask (1976) described two relatively permanent styles of learning: comprehension and operation learning. A task specific learning strategy was associated with each style (holist and serialist respectively).

14. Brumby is guilty of over-generalisation. Not only does she fail to distinguish between cognitive style, approach and strategy but she also gives scant attention to the differences between Witkin's concept of field independence (Witkin, 1950), the atomist approach of Svensson and Pask's operation learning. Brumby uses these various styles and approaches as illustrative examples of a perception style where the student 'immediately breaks a problem or task into its component parts, and studies them step by step as discrete entities, in isolation from each other and from their surroundings' (p. 244). Brumby's second stylistic dimension relates to integration with existing knowledge. Here she distinguishes between a memorising approach and active integration. Ausubel's rote learning, Marton's surface processing and the operation learning of Pask illustrate memorisation while meaningful learning, deep processing and comprehension learning define integration. She does not discuss how Pask's strategies of holistic and serialist learning can be examples of one 'style' while his own styles of comprehension and operation learning are subsumed into the second. A similar problem exists for the atomist/holist distinction of Svensson and Marton's deep and surface approaches.

15. Orientations to study reflects a student's 'general tendencies to adopt particular approaches (deep or surface) to learning' (Ramsden, 1984 p. 158).

16. Entwistle originally used the term 'approach to study' (Entwistle and Ramsden, 1983). More recently 'approach to learning' has been widely adopted (e.g. Marton et al., 1984; Ramsden, 1985).

17. The development of the ASI has seen the removal of dimensions such as sociability and openness (Entwistle et al., 1979) and the clarification of the role of extrinsic motivation (Ramsden, 1984). Initially extrinsic motivation was associated with the reproducing orientation. Research by Entwistle and others (e.g. Watkins, 1982a; Willis and Clift, 1983) has pointed to a closer relation with achievement motivation and to the existence of a disorganised/negative factor (Watkins, 1982a).

18. Orientation is not unchanging. Students may change their orientation as the result of changing conceptions of learning or contextual conditions (see p. 38 for a discussion of the influence of context).

19. More recently, Ramsden (1985) has repeated the earlier claim that approach combines a student's intention and learning process as directed at a learning task. Orientation is more general and reflects a general tendncy to 'approach learning in a particular way' (p. 57)

20. It is interesting to note that subsequent factor analysis of the ASI indicated that globetrotting is associated with a disorganised factor (Ramsden and Entwistle, 1981; Entwistle and Ramsden, 1983). In the 1983 analysis the meaning orientation 'showed a strong stylistic component (comprehension learning). However, meaning orientation, as opposed to reproducing orientation contained no element of pathology in its loading'(p. 48). In fact the strongest loading factors on the meaning orientation were deep approach (0.70) and intrinsic motivation (0.72).

21. Pask (1976) argued that the learning strategies of students expressed a bias in favour of a comprehension or operation learning style. These styles reflected a tendency of an individual to focus on the 'overall picture of the subject matter' (comprehension learning) or to 'pick up rules, methods and details' (operation learning) (Pask, 1976 p. 133). Ideally a student draws from both styles in a versatile manner to achieve a complete understanding. Over-reliance on comprehension learning results in the pathology of globetrotting where the student is preoccupied with generalities. Alternatively a failure to 'see the wood for the trees' indicates the pathology of improvidence.

22. Cognitive style is usually taken to mean 'typical modes of perceiving, remembering, thinking and problem solving inferred from consistencies in manner or form of cognition as distinct from content of cognition or level of skill displayed in the cognitive performance' (Messick, 1979 p. 287). Although some writers (e.g. Brumby, 1982) have equated cognitive and learning style. Learning style at least as identified by Pask relates to styles of learning adopted to reach understanding, rather than differences in perception (e.g. Witkin, 1950). A major difference between cognitive and learning style is that the former is viewed as a bipolar trait, with the latter expressing tendencies and preferences directed towards learning. One's style does not determine the strategies used, rather learning style reflects a predisposition to adopt particular strategies (Entwistle, 1981). Cognitive style however describes a pattern of perception.

23. Metacognition refers to 'the higher-level (superordinate, executive) processes of learners' (Shuell, 1986, p. 415).

24. The work of Marton and Saljo (1984) does indicate that students who make use of a deep approach possess some awareness of contextual demands and adjust their strategies accordingly.

25. Biggs developed the Study Process Questionnaire for use with tertiary students and the Learning Process Questionnaire (LPQ) for second school students.

26. The utilising and internalising dimensions were renamed deep and surface approaches in recognition of the currency of these terms in the literature (Biggs, 1985). However Biggs stressed the enduring nature of approach. 'Individuals are predisposed by their personality to adopt one approach in preference to another, while certain situations encourage or inhibit particular approaches' (p. 187).

27. It should be stresed that metacognition is a process rather than an end state (Biggs, 1988). Biggs (1985) used the term metalearning when applying metacognitive principles to the field of student learning. Metalearning refers specifically to 'students' awareness of their motives and control over their strategy selection' (p. 192). He argued that metalearning can be observed when students match motive and strategy to produce an effective outcome. For example the surface-achieving students are unlikely to obtain high marks by using reproductive strategies (unless the task specifically requires memorisation of factual material). In this example, Biggs is making the assumption that the assessment requires some form of understanding. Although not using the terms metacognition or metalearning, other reserchers (e.g. Miller and Parlett, 1974; Laurillard, 1979; Gibbs, 1981; Jones, 1981) have demonstrated that students form different perceptions of their learning environment.

28. Maehr (1974) argued for a framework that allows for the study of cultural influences on achievement motivation. He suggested that 'the achievement motivation that is not found among the so-called culturally disadvantaged may not have been found because it was not sought in the right places' (p. 894).

29. For more detail on Nicholls' work see Nicholls, J. Conceptions of ability and achievement. In R. Ames and C. Ames (Eds). Research on motivation in education. Vol 1. *Student motivation*. Orlando: Academic Press, 1984.

30. The competitive element could be removed by use of criterion referenced assessment (Glaser, 1963).

31. For example, Nicholls' (Nicholls et al., 1985) use of the term orientation to describe responses to situations where students feel most successful (e.g. I feel most successful if I get out of work – avoidance of work). Reference to learning style rather than orientation is common in American research (e.g. Gregorc, 1979; Kolb, 1981; Schmeck, 1983). It should be noted however that orientation reflects intention in the work originating in Europe and Australia.

32. Attempts have been made to relate teaching style to learning style. Results are mixed although there is some suggestion that students show lower levels of achievement when there is a marked mismatch between their own style of learning and the style of teaching adopted by the teacher (Entwistle, 1981). However, failure to produce clear findings may be the result of complex interactions of variables (Cronbach, 1975).

33. With the exception of the social educational orientation, each possessed an intrinsic and extrinsic dimension. Intrinsic orientation reflected a focus on the course material while in an extrinsic orientation, content was irrelevant to the student in the achievement of their learning goals.

34. The role of non-cognitive factors in influencing the success, failure and style of learning of university students has been demonstrated by Wankowski and Cox (1973).

35. Savicki et al. do not provide information as to students' major subject areas, describing students as selected members of the Class of 1969 at Massachusetts University.

36. van Rossum et al (1985) argue that the five levels do represent developmental change.

37. The development of the Perry's scheme was based on lengthy interviews carried out with seventeen students entering Harvard and Radcliffe colleges in 1954. These students were followed over four years. Subsequent research using larger numbers of students confirmed Perry's earlier findings. Details of the complex scheme can be found in Perry (1970).

38. Terenzini's concept of course involvement is discussed in detail in Chapter 2.

39. These results are contrary to those of Thielens (1977), who claimed that students are unlikely to attribute gains in their learning to the efforts of staff.

40. It is important to note that deep and surface approaches are value free. Their worth relates to the compatability between strategy and task demands.

41. Only 40% of science students reported changes in approach to study from first to second year.

42. An example of this interaction is illustrated by Lewin (1935) who describes a child playing with a doll. The child is attracted to the doll (possessing positive valence in Lewin's terms). If the attraction is strong enough relative to other psychological forces present at the time, the child will play with the doll. The strength of the attraction will vary from child to child and situation to situation.

43. The research of Ramsden (Ramsden and Entwistle, 1983) and Biggs (1978) has indicated that approaches to study have different interpretations in different disciplines. Using interview data, Entwistle and Ramsden argued that 'it is clear that what goes to make up a deep or surface approach in one discipline is not the same as in another discipline. Moreover while the meaning of the deep-surface approach in one discipline is fundamentally the same in different subject areas, there are important variations in emphasis' (p. 142). See also discussion on subject matter p. 51.

44. Laurillard's statement indicates significant variability in intention and represents a contrasting perspective to that stated by Entwistle et al. (1979) 'In attempting to measure approaches, however, there is an assumption that students will exhibit sufficient *consistency in intention* and process across broadly similar academic tasks to justify measuring it as a dimension' (Entwistle et al., 1979 p. 367) (emphasis mine).

45. The prime objective of illuminative research is to 'throw light' upon what is actually happening in the teaching/learning environment. Conceived by Parlett (Parlett and Dearden, 1977) as a technique for programme evaluation, it combines a number of methodologies (e.g. participant observation, questionnare, interview). Such an approach draws on the work of Webb et al. (1966) who suggested that research designs that incorporated different methods and a range of data sources would produce more reliable results than studies based on one method or information base. This combined approach was termed 'triangulation' (Webb et al., 1966; Cohen and Manion, 1980).

46. Barrett and Weineke (1979) conducted an evaluation of a one hundred level arts course at the University of New South Wales. Of particular

concern to the staff running the course was a decline in lecture attendance by the students. The researchers adopted an illuminative methodology to understand why this was happening.

47. Hidden curriculum describes the covert message communicated in an educational setting (e.g. Apple, 1979). In higher education, Snyder (1967) used the term to describe the distinction students made between the formal requirements of a course as stated by staff and the actual requirements necessary for students to gain personal goals (Snyder assumed the main objective was high grades).

48. Entry characteristics include family background (i.e. socio-economic status) and demographic characteristics (e.g. size of high school (Feldman and Newcomb,1969).

49. Barrow (1984) discussed the problem of attempting to classify teachers as direct or indirect in style. He pointed to a confusion between directness and teacher warmth in earlier research and the difficulty of coding behaviours that characterise each style. Barrow does assume that 'Students taught by an indirect style should, by and large, show more signs of involvement and opinion-giving and should feel that their ideas are worth having' (p. 172). An important feature of the current study is that the findings relating to teaching style are based on student perception rather than the observational studies referred to by Barrow. See also Entwistle (1981) for a discussion of teaching styles.

50. For an extensive discussion of the literature on the relationship between evaluation and study learning see Crooks (1988).

51. In an interesting critique of E. L. Thorndike's laws of learning (McKeachie, 1974) discusses a range of contradictory evidence on the role of feedback. He concludes with the following remark. 'It is fitting that I learned from E. L. Thorndike's grandson, Robert M. Thorndike what I regard as the best generalisation we can currently make. He suggests that knowledge of results eventuates in improved performance when the learner is motivated, when the knowledge of results is informative and when the learner knows or is told what to do to correct his errors' (p. 10)

52. The importance of thinking time is developed by the extensive literature on reflection, details of which can be found in Boud et al. (1985), and Brookfield, (1987) and Viskovich (1988).

CHAPTER 2

LITERATURE REVIEW
INVOLVEMENT

INTRODUCTION

Although not central in educational writing, the importance of involvement in learning has been acknowleged by a number of writers (e.g. Beakley and Chilton, 1972; Powell, 1979; Stephen, 1981; Astin, 1984). Unfortunately its value as an educational concept has been limited by the range of meanings it has been given. Definitions suggest a complex concept that has been variously defined as 'the amount of physical and psychological energy that the student devotes to the academic experience' (Astin, 1984 p. 297); 'engaging in the activities of a course programme with thoroughness and seriousness; feelings, motives, purposes; and self-direction or a capacity for commitment and checking where the study is leading, as a personal undertaking' (Adams, 1979 p. 511). Adams' definition of involvement is a comprehensive one and significantly derived from research. Other researchers have made extensive use of the term[1] (e.g. Fisher et al., 1980; Kerwin, 1981; Terenzini et al., 1982; 1984) but have failed to provide clear statements of meaning as illustrated by Terenzini's statement. 'The student who is more integrated into (or "involved" in) the academic and social life of an institution is more likely to grow in a number of ways than is the student who is less integrated or involved' (Terenzini et al., 1982 p. 89). Similarly, Fisher et al. made casual use of the word, including involvement as one synonym for engagement with no further elaboration. 'The student's engagement (involvement, on-task behaviour, attending)' (p. 14).

To date, involvement has played a supporting role in much of the learning research where it is mentioned (e.g. Calder and Staw, 1975; Entwistle, 1981; Nicholls, 1984). In the course of this discussion I will examine the nature of involvement and argue that involvement is a unique concept in its own right, and essential if students are to be able to relate what they learn to their own lives.

This chapter aims to establish involvement as a concept in its own right and one that can usefully be integrated into the work that has been done on approach to learning. To achieve this, the discussion will examine the nature of involvement as it appears in the literature; discuss the similarities and differences between involvement and motivation; establish that a relation exists between involvement and the quality of learning. The chapter concludes with a presentation of the aims of the present study.

THE NATURE OF INVOLVEMENT

Involvement occurs in sociological (Goffman, 1957; Borgatta and Cottrell, 1955) as well as educational psychology literature (Astin, 1984; Terenzini et al., 1982; Fisher et al., 1980). As such it appears in contexts which range from group interaction (Goffman, 1957) to definitions of ability (Nicholls, 1984). Few studies have chosen to focus specifically on involvement, the work of Miller (1977)[2] and Astin (1984) being notable exceptions. Because the nature of this concept has not received the attention it arguably deserves, it is not really surprising that the meaning of involvement is somewhat unclear.

This section of the literature review sets out to rectify that omission with the objective of setting up a definition that can be justified in the literature and compared with learners' own perceptions of involvement. It proceeds as follows: Firstly there is a discussion of forms of involvement. Secondly the nature of involvement is examined through its

measurement; in other words, how have researchers set out to measure involvement and what does this tell us about the nature of the concept itself? The remaining sections are devoted to a discussion of certain emphases given to definitions of involvement. These are: involvement as behaviour, involvement as energy and finally involvement as personal commitment.

FORMS OF INVOLVEMENT

Astin (1984) argued that there are six forms of student involvement (place of residence, athletic involvement, involvement in student government, participation in an honours programme[3], student faculty interaction and academic involvement). These forms relate more to the total university experience than specifically to academic or intellectual activity and reflect Astin's interest in personality development rather than learning.

The six forms of involvement fit neatly into two more general categories. The first might be termed institutional involvement and includes place of residence, athletic involvement and participation in student politics. This category reflects the students' integration into the life of the university (Tinto, 1975). The remaining three forms have more obvious connections with learning and could be subsumed under the heading intellectual involvement. Participation in an honours programme is an important element in a student's intellectual experience. The second form of involvement to be included in the intellectual involvement category is Astin's own more narrowly defined academic involvement. He referred to a range of study related activities such as the number of hours spent studying, level of interest and study habits. The implications of these examples for his definition of involvement will be discussed below. Suffice it to say, the nature of academic involvement is multidimensional, combining as it does involvement as time, degree of interest and quality of

study strategies. Student-faculty interaction[4] also represents an aspect of a student's intellectual experience. Unfortunately Astin saw this in terms of frequency of contact. Despite asserting that 'frequent interaction with faculty is more strongly related to satisfaction with college than any other type of involvement, or, indeed any other student or institutional characteristic' (p. 304), Astin did not make any comment about the range of formal and informal, in and out of class interactions that take place between students and staff.

It appears that students can be involved in a range of university situations and activities. However, description of these activities does not tell us anything about the nature of involvement. Clearly, a student who is involved in an athletic programme will display a different set of behaviours to the student who is involved in study. Is the nature of involvement different in the situations he describes? Astin's own definition suggests that it is not. According to Astin, 'student involvement refers to the quantity and quality of the physical and psychological energy that students invest in the college experience'. (p. 307). Involvement is defined as energy[5] that the student directs to self selected activities. One can conclude that although the focus of involvement changes, involvement itself does not.

To return to forms of involvement, Terenzini et al (1982; 1984) made a distinction between classroom and social involvement. Their research explored the relationship between student development (personality and academic) and various institutional factors. In a modified version of Tinto's integration theory[6], Terenzini et al. (1984) argued that the more a student is integrated into the academic and social life of the university the more likely he/she will develop (both academically and personally). A significant part of the research programme involved the development of a range of quantitative measures of student academic skill development, institutional integration and social and classroom involvement. It is interesting to note

that despite the fact that Tenenzini equated involvement with integration, the classroom and social involvement scales were only subsets of the scales used to measure the 'various dimensions of social and academic integration'(Terenzini, 1982, p. 93)[7]. These two types of involvement were identified using principal components analysis of ten 'involvement items'. The authors developed a 4 point scale (almost never to almost always). One can only gain an idea of the nature of social and classroom involvement by examining the items in the inventory as Terenzini does not define involvement explicitly[8]. Items are given below:

Classroom involvement

1. Enjoyed classes

2. Learned something new in classes

3. Learned from out of class assignments

4. Found interesting courses

5. Expressed views in class

Social involvement

1. Felt at home here

2. Met students who were interesting

3. Attended quad/dorm parties

4. Did things with other students

5. Found interesting things to do on campus

The overall theme to emerge from the social items is one of integration into the social life of the university. Like Astin's forms of involvement it represents another situation towards which students may direct their energy. The nature of classroom involvement is not as clear, presenting a view of involvement as a mixture of experiences (items 1 and 4), learning outcomes (items 2 and 3) and classroom participation or interaction (item 5).

Involvement can be observed in a variety of contexts. The studies mentioned above give some clue as to the nature of academic involvement itself. For example Astin stressed the direction of energy towards behaviour. Terenzini et al. suggested that classroom involvement embodies elements of experience, interaction and outcome. The following sections examine key elements in various 'definitions' of involvement as it relates to learning.

MEASUREMENT OF INVOLVEMENT

One gains considerable insight into researchers' perceptions of a concept by examining techniques of measurement. Of interest here is not the measurement techniques themselves (e.g. quantitative vs qualitative) but rather, what they tell us about the researchers' views of the nature of involvement. This section firstly discusses measurement of involvement as a qualitative or quantitative concept and secondly examines the importance given to the measurement of variables generated by learners as opposed to those developed by the researcher.

Involvement as quantity or quality

Fisher et al. (1980) measured students' involvement in terms of time on task. In a large study entitled the 'Beginning Teacher Evaluation Study', Fisher et al (1980) focussed directly on the relation between time and the academic achievement of seven-year-old children (as measured by multiple choice achievement tests in Maths and Reading). They suggested that a key element determining achievement is not the amount of time allocated by the teacher for an activity but rather the amount of time the student spends in active engagement. Fisher's concept of active engagement is synonymous with attention, involvement, and time on task. According to Fisher et al., an attentive student is one who is 'actively involved in the task at hand, probably with some enthusiasm' (p. 23). This tautological argument states that an involved student is one who is involved in the task at hand!

Measurement of involvement was done using observers who recorded the amount of time students engaged in on-task activity. This form of measurement clearly indicates a quantitative and behavioural view of involvement (i.e. the more time spent on-task the more involved a student is).

Although they did refer to certain classroom activities (e.g. group work) that seemed to encourage students to spend time on the task, Fisher et al. did not comment upon the possibility that involvement is qualitatively different in group work than during individual study. Measurement of time on task would not reveal such qualitative differences. Furthermore, work by Alton-Lee (1984) suggests that observers may be inaccurate in their assessment of time on task. A difference can exist between what the observer thinks the child is doing and the reality. A child may appear to be actively engaged in the 'approved' task but in fact be learning misunderstood concepts or planning after school activities. Alton-Lee demonstrated that the apparently off task activity of rubbing out was positively related to the amount learnt. A child observed to be gazing out of the window may in fact be relating course material to some personal experience. In short, one needs to consider the quality of intellectual activity rather than the amount of time a student appears to be 'on task'. It is interesting that Fisher et al. raise this point themselves when they state that a 'learning child' (one who obtains high scores on the achievement test) not only spends long periods of time on task, but also knows how to learn. The child spends 'a lot of time practising and reviewing skills' (p.23). One can argue that it is not the amount of time that is important here but the quality of the learner's metacognitive skills that are more closely related to achievement. If one is to understand the nature of involvement it is essential to uncover what students do when they are involved rather than quantifying the time spent.

Terenzini et al. (1982) were interested in the frequency of social and classroom involvement. Students were asked to assess how often they enjoyed classes, attended 'dorm. parties' etc. Although still quantitative, Terenzini saw level of involvement in terms of how often students engaged in involvement activities rather than the amount of time spent on each (Fisher et al, 1980). Apparently Terenzini did not consider the possibility that the range of behaviours mentioned were in any way qualitatively different. Neither Fisher nor Terenzini explored involvement in terms of depth of feeling.

Despite an assertion that involvement has a qualitative dimension, Astin emphasised the measurement of involvement as a quantitative concept (hours spent studying). Even his qualitative example of review and comprehension of reading assignments versus day-dreams is quantitative in the sense that it refers to the use of a considerable amount of mental energy (directed to the task) in the first example versus none in the second. The effect of involvement on student personality development is discussed with the clear view that involvement relates to hours spent. For example, Astin suggested that a high level of academic involvement will have a detrimental effect on the breadth of student experience. The assumption here is that academic involvement necessarily means that long hours will be spent in study. The student will therefore have less opportunity to interact with his/her peers. However, students can be involved and engage in deep level processes without spending long hours of study devoted to one topic (Pace, 1982). Even studying itself can be undertaken in cooperative groups. In which case involvement would not be at the expense of other activities or study in other subjects. The problem with these perceptions of involvement is that they suggest that a student is involved if they put time into learning or engage frequently in 'involvement' activities. Is there more to being involved than spending time on learning?

Although not specifically mentioning involvement, the work of Pace (1982) provided useful insights into the concept. Astin compared energy with effort and it was effort that interested Pace. He stressed the importance of measuring quality as well as quantity of effort. Pace made an important distinction between effort in terms of time spent and the quality of the activity. For example, discussion with others is at a higher level of quality than taking notes. Unfortunately this example does overlook the range of notetaking/making activities. For example, superficial discussion of a factual point appears to be at a lower level in terms of quality of effort than actively making notes (i.e. integrating ideas and linking new information with previous learning). Pace was able to show that quality of effort is a better predictor of academic achievement than time on task. The emphasis on quality of effort is a significant advance on the predominantly quantitative view of expended energy expressed by Astin.

It is interesting to note that these studies have all measured involvement as a behaviour. Even Astin who defined involvement as energy gave little attention to investigating the nature of the energy itself.

Researcher and learner generated perceptions of involvement

The assumption that the learner takes an active part in the process of learning lies at the heart of much of the involvement-related research. Astin made his view quite clear. 'The theory of involvement...emphasises active participation of the student in the learning process' (p 301). It is interesting to note that Astin and others (e.g. Newell, 1984) placed the responsibility for encouraging involvement with the institution. Astin argued that 'a particular curriculum, to achieve the effects intended, must elicit sufficient student effort and investment of energy to bring about the desired learning and development' (p. 301). In short, if it creates a climate[9] that encourages involvement, students will inevitably become involved. Clearly, a range of contextual factors are important in creating a favourable

climate for the development of students' involvement (developed below). However one must not overlook personal factors such a student's educational orientation (Taylor et al, 1980) and interest (Ford, 1979). It can be argued that involvement is the result of the interaction between personal and contextual factors.

In line with such a view it is important to consider student perceptions of involvement and the factors that affect it. Some studies have included the measurement of student perceptions in their methodology.

Terenzini et al (1982) asked students to rate the frequency of their involvement. However the researchers established the parameters of a definition of involvement in their classroom and social involvement scale. The same study also asked students to estimate their growth in four areas (personal growth, academic processes, academic content and future preparation). A more open approach was taken by Miller (1977) who allowed students (and staff), the freedom to provide their own definitions of involvement in response to an open ended question. The range of responses covered feelings and experiences as well as activities. Pace (1982) based his work on students' own reports of the nature of their effort.

If involvement is an important factor in determining the quality of student experience and learning it is important that the students' own views on the nature of involvement, factors that encourage or discourage involvement and its benefits are taken into account. The argument presented above is consistent with the distinction made between first and second order research perspectives (Marton, 1981).

INVOLVEMENT AS BEHAVIOUR

Involvement as behaviour has been a major focus in the literature. This section examines the relative importance of behaviour and feelings in the nature of involvement.

Astin acknowledged that involvement does have an 'internal' component. He saw this as part of an individual's motivation (a point which will be debated below) and devotes the remainder of his paper to a discussion of the behavioural components of involvement. Astin's interest 'is not so much what the individual thinks or feels, but what the individual does, how he or she behaves, that defines and identifies involvement'. (p. 298). It is interesting that his examples of academic involvement are not limited to observable behaviour. In addition to number of hours spent studying and good study habits[10], Astin included degree of interest which is certainly internal. Further one can argue that number of hours spent studying is a measure of involvement not involvement activity itself. Study habits are certainly behaviours but the term 'good' is confusing. One assumes Astin meant 'good' in the sense that the study habits are effective in gaining high marks (which may indicate amount of learning). 'Good' suggests a judgement of worth that seems inappropriate in this context. Study habits are more or less effective depending on the student's objective.

A behavioural approach to involvement is useful from an educational point of view. Staff are easily able to measure their students' level of involvement, modifying their teaching if the level appears too low. However, this raises the problem of what are we to measure? Is it the time a student spends on a task or the kind of activities a student engages in, or the learner's degree of personal commitment?[11] Is it possible to say that if a student engages in a particular behaviour he/she is inevitably involved? Is involvement not more to do with the strength of commitment a student possesses (Ford, 1979)? I argue here that a focus on the behavioural component of involvement is not sufficient. To gauge the level and nature of involvement one must also look at a student's feelings about what he/she is doing.

Miller (1977) began his study with the assumption that involvement takes 'many forms' (p.55). His examples of these many forms (i.e. listening to lectures, completing set exercises or participating in class discussions) suggest that he perceived involvement in terms of activity. The sample of academic staff at Australian National University who responded to Miller's questionnaire similarly defined involvement as learning behaviour with the most predominent view being active participation in class discussion. However staff also referred to 'inner' responses such as desire to learn, commitment and feelings as well as involvement as outcome (marks). Miller gives the following examples:

> *'Student involvement is the student's feeling of personal responsibility for its own sake'*
> *'Student sense of commitment to the subject for its own sake'*
> *'A following through of problems not merely meeting formal requirements'.*

(Miller, 1977 p. 57)

Miller asked students to 'list five most important ways that they had been involved in learning in the present unit' (p. 58). They were not asked to give definitions. However, he used this data to conclude that students tended to perceive involvement in terms of activites (e.g. attending classes, doing reading and talking to staff and students). This emphasis is not really surprising given that the wording of the question directed students towards activity. A few individuals did distinguish between personal and academic involvement (similar to Terenzini's social and classroom involvement).

Apparently, staff and students have different views about involvement. Students emphasise activity – mostly doing amounts of course work rather than indepth study. Staff add some sense of personal commitment to learning activities. The qualitative gap between staff and students appears to close when students consider ways of increasing

involvement. A number of students mentioned discussion (Miller, 1977) which indicates a level of active participation and possible commitment to one's ideas.

Miller's findings indicate that any definition of involvement must make allowance for a wide range of personal interpretation. Although presenting no evidence to support this view, Miller suggested that individual differences such as personality have a role to play in determining an individual's definition of involvement. Furthermore he also demonstrated the existence of subject area differences. For example, students in the Law Faculty were more likely to see involvement in terms of doing set reading than did History or Multi-disciplinary Arts students. On the other hand, the Multidisciplinary Arts students emphasised discussion with staff and students to a greater extent than the students in other subject groups.

Adams (1979) summarised Miller's results and pointed to a distinction between involvement *actions*, and *feelings* or interests. Adams built upon Miller's definitions and described them in terms of categories of involvement and associated values such as interesting vs boring, happiness and joy vs anxiety and fear. Adams' study focused largely on the four categories (Table 2.1). They cover a range of learning activities, feelings and experiences.

Behavioural aspects of involvement make up the majority of the category subsets. The accountable category refers to things that students seem to be expected to do (i.e. they are held accountable). One must ask however, held accountable to whom and to what standard? Unfortunately distinctions are not made between course work that is a basic requirement for passing and that perceived to be more than required. This is a particular problem in the 'reading for course programme' subset. Adams separated interaction from other course related activities and placed interactive activity in a category of its own. As with the accountable category the

focus is on behaviour rather than feelings. Although a distinction is made between in-class discussion, and discussion that takes place out-of-class between students or between students and staff, Adams categorises the out of-class discussion as informal. Terenzini et al. (1984) looked at out-of class contact between staff and students in more depth and suggested that students and staff could interact formally as well as informally in this context. The researchers based their analysis on interactions lasting longer than ten minutes. Terenzini et al. differentiated interactions 'dealing with academic purposes' (p. 625) such as discussing course work and obtaining advice on academic programmes from those that had a non-academic purpose. These included discussion of personal problems or informal socialisation. Terenzini was able to show that frequency of *academic* out-of-class contact was positively related to academic skill development (e.g ability to work independently and mastery of content).

Adams' (1979) 'decision-making' category of involvement included course-related decision-making such as choice in mode of assessment and participation in committees. This subset related more to extra-curricular activity and is closer to Terenzini's concept of social involvement. The key element here is that students control the direction of their learning experience as reflected in their active participation.

The 'experiential' category is the most problematic. Its purpose is to describe a range of course related feelings and experiences. Clearly enjoyment and admiration for the subject are feelings, while educational, interdisciplinary and career experience are also appropriately categorised. However, Adams included independent learning such as 'own reading' and 'self direction in learning' in the 'experiential' category. These would be more appropriately assigned to a subset in a category covering learning activities although a *desire* to engage in self directed learning certainly represents student feeling. Commitment is experiential but its association

with 'investment time/effort' suggests that Adams sees commitment in behavioural terms. Adams also classified coping stategies as experiential. An individual's ability to cope with the demands of university may reflect

Table 2.1 Activities/aspects of course perceived as crucial to the definition of 'involvement'

Accountable performance (contract)	0 (a)	Attendance at lectures.
	0 (b)	Attendance at tutorials, practicals, etc.
	1	Fulfilling required/recommended course activities (general)
	1	Fulfilling recommended course activities (specific): (a) lectures; (b) tutorials; (c) other pracs.
	2	Reading for course programme.
	3	Writing papers, projects; assessed papers.
	4	Exams and tests (pro factor vs con factor).
	5	Structure/course plan prepared/directed by teacher.
Interaction	6	Tutorials/pracs, interaction (a) participant; (b) even silent.
	7	Informal interaction outside classes
	8	Informal interaction outside classes (students)
Experiential	9	Enjoyment, admiration for subject.
	10	Commitment/investment time effort; own reading.
	11	Self-direction in learning, other self-responsibility.
	12	Breadth of educational experience (including extra-curricular), interdisciplinary experience, including career experience.
	13	Strategies for coping; toward rival course claims; workload; assessment distortion/ dissimulation.
Decision-making	14	Committee participation
	15	Course-plan development (choice in)
	16	Modes of assessment (choice in)

(Adams, 1979 p. 509)

emotional characteristics. However, strategies themselves seem more aptly defined as learning activities. 'Experiential' is a broad category covering affect as well as cognitive experiences (e.g. breadth of educational experience). With this in mind, further research is needed to distinguish internal aspects of involvement from what students actually do.

Adams does suggest a definition of involvement. It attempts to combine all the categories into one broad statement.

> *'Engaging in the activities of course programme with thoroughness and seriousness, feelings, motives, purposes, and self direction or capacity for commitment and checking where study is leading, as a personal undertaking'.* (p. 511)

The central element in Adams' definition is the view that an involved student is one who participates in course work in a way that reflects some serious commitment to study. Significantly, involvement does not represent any one activity or qualitatively distinct group of activities. The key idea here is not the nature of the activity but the frame of mind in which it is undertaken. This seems to lie at the heart of a definition of involvement. It can be argued that a student's perception of the nature of involvement will play a significant role in the selection of involvement activities. Clearly, to make effective use of a particular activity the student must possess the necessary level of study skill competence.

The suggestion that involvement has behavioural and affective aspects was put up by Adams (1979). Other writers have made a similar point (Goffman, 1957; Fisher et al., 1980; Terenzini et al., 1982). For example Fisher et al. stated 'there is some indication that high attention (involvement) is usually the result of interest and enthusiasm. However, one needs to examine whether feelings are part of the definition or an important component in the development of involvement. It certainly seems likely that positive feelings about a course will encourage a student to become involved (as Fisher's quote suggests), just as the experience of

involvement may result in the student enjoying the course even more. Thus, affect can be a reason for and a result of involvement. Involvement, in the sense that it represents personal commitment, is a combination of affect and behaviour (Rogers, 1969), thus the two elements are mutually supportive.

INVOLVEMENT AS ENERGY

The predominant description of involvement in behavioural terms is related to the view that involvement reflects the direction of energy[12]. The purpose of this section is to establish that involvement as the investment of energy is too restricted. The argument that involvement represents the investment of energy has been proposed most clearly by Astin (1984) who claimed that this energy can be both psychological or physical and that the energy can be invested in various objects (general or specific). The degree of involvement is determined by the amount of energy expended by the student. Astin suggested that involvement has qualitative and quantitative features. However he referred here to the qualitative or quantitative measurement of behaviour not the nature of energy itself. In other words behaviour can be measured quantitatively in terms of hours spent, number of books read or qualitatively in terms of the degree to which the student attempts to understand underlying meaning. Thus, energy can be either more or less as the student invests an amount of energy into a range of learning activities.

Is it possible to describe energy in qualitative terms (i.e. different types of energy)? Borgatta and Cottrell (1955) identified two forms of energy that initially, at least, seem to be qualitatively different. They emphasised the importance of involvement as a factor determining the quality and effectiveness of social groups. Using artificially created groups of three, the authors identified seven component variables that could be used for group classification. Two of these variables represented different

forms of involvement. The first was termed 'involvement activity', manifesting itself in high levels of emotional energy. Group members expressed opinions with displays of affect and emotion without tension. The second factor was termed discussional involvement and represented high levels of intellectual activity by group members (i.e. discussion and debate). Closer examination reveals that emotional and intellectual energy are actually defined in behavioural terms. It is the nature of behaviour that distinguishes emotional from intellectual energy (i.e. examples of 'emotionally toned opinion' and displays of 'solidarity' (p. 672) as opposed to intellectual discussion).

Goffman (1957, 1961) also perceived involvement as energy in the sense that involvement varies in its level of intensity. When observed at its most intense, involvement is totally engrossing and essential if individuals are to avoid alienation from social interaction. Although Goffman measured involvement in behavioural terms (i.e. degree to which group members share a common focus of attention and exhibited socially approved involvement behaviour) he also linked involvement with inner experience referring to the

> *'organismic psychobiological nature of spontaneous involvement...when an individual becomes engaged in an activity, whether shared or not, it is possible for him to become caught up by it, carried away by it, engrossed in it - to be, as we say, spontaneously involved in it. He finds it psychologically unnecessary to refrain from dwelling on it and psychologically unnecessary to dwell on anything else. A visual and cognitive engrossment occurs'*(Goffman, 1961 p. 38).

In his earlier paper Goffman (1957) made it clear that intense involvement required that the individual be emotionally committed to the task at hand. It was not sufficient to be going through the motions in a behavioural sense while emotionally committed to something else. The role of affect in determining the intensity of involvement was made even clearer in a paper

by Sarbin (1954). Sarbin argued that different degrees of involvement reflected

> *'an intensity dimension...At the low end of the dimension would be the kind of interaction which occurs with little affect and with little effort. The role of the customer in today's supermarket involves only minimal participation - the saying of a few words, plus a few movements involved in the exchange of money. Contrast this role with the intensity involved in enacting the role of the mother with a sick child'*(p. 233)

Sarbin also referred explicitly to the qualitative nature of involvement by suggesting that involvement was qualitatively different at different levels of intensity. He actually identified seven levels of intensity; the lowest of which is demonstrated by the supermarket shopper who is able to carry out this role while adopting other roles (e.g. that of mother). The most extreme level of intensity is illustrated by involvement in a role that may have irreversible consequences (i.e assuming the role of a dying person as in a case of voodoo or death wish). Energy itself varies in terms of its amount and as such is a quantitative concept but as demonstrated by Sarbin, an integral part of involvement is emotional. Although the social interactionists referred to here (Goffman, Sarbin and Borgatta and Cottrell) directed their attention to interpersonal interaction, involvement as personal input, combining cognitive and affective elements can be directed to the area of student learning. Moreover, in his analysis of involvement, Goffman provided a useful link between an intense reaction (i.e. energy) and a particular focus of attention. Thus, Goffman's work is important as it demonstrated that involvement could be seen as the direction of intense energy towards a particular object which is also relevant for the learning context.

In this section it has been agued that energy itself is a quantitative concept and may be directed into activities that can be measured quantitatively or qualitatively. Energy remains the same and it is the quality of behaviour that changes. While energy is used to define involvement it is likely that it will be measured in behavioural terms. However, energy may also be viewed in terms of emotional intensity which suggests that involvement is more than cognitive input. This point is discussed below.

INVOLVEMENT AS PERSONAL COMMITMENT

Involvement is the active expression of commitment. According to Rogers (1969), 'commitment is a total organismic direction involving not only the conscious mind but the whole direction of the organism as well' (p. 273). At its extreme level of intensity, involvement may represent complete self absorbtion. Goffman (1957) made a similar point when he suggested that the involved person 'becomes an integral part of the situation, lodged in it and exposed to it, infusing himself into the encounter' (p. 38). Thus, the individual is totally committed at a personal level.

Rogers distinguished between rote and experiential learning. The latter is inner directed, combining cognition and affect. The fundamental difference between rote and experiential learning lies in the degree of meaningfulness it has for the learner. Rogers touched on a significant point, namely the distinction between learning as an activity that gives meaning to content, and learning with a sense of personal commitment to what one is doing. The former is similar to Marton's deep approach. The importance of learning as commitment is developed by Ford (1979) who argued that deep strategies are not enough to achieve a sense of personal meaning and lifelong commitment to learning[13]. The activities of analysis, synthesis and evaluation practised during a course need to be combined with personal acceptance and valuing of information[14] if significant long term learning is

to take place. Ford (1980) pointed to the fact that acceptance and valuing seem tautological as 'students tend not to value information they do not accept, or if they do, tend to value what they accept' (p. 66). Significantly Ford went on to suggest 'that accepting and valuing may perhaps best be considered as indicators of a common construct - 'commitment' - but relating to different stages in a learning task'. If students are to become involved they need to see the relevance of what they are learning - not just as this relates to extrinsic goals but to themselves as people.

According to Perry (1981), student commitment to ideas is a significant step in intellectual development and marks the transition to position 6 (Commitment forseen) and above. In this context commitment is defined as 'an internal disposition through which one apprehends the possibility of orienting oneself and investing one's care in an uncertain and relativistic world' (p. 94). A combination of awareness of one's ideological stance and the relativity of knowledge is also expressed in level five of students' concept of learning (Saljo, 1978; Gibbs et al., 1982). Van Rossum and Deijkers (1984) extended the original five concepts of learning described by Saljo, by noting that some responses 'expressed other than purely cognitive attitude...in these answers the emotions, the intuition, the person of the subject seem to play a more important part than in any of the other response categories' (p. 223). However, in the Perry and van Rossum and Deijkers research the students studied Humanities and Social Sciences. Entwistle (1981) argued that a student may be more likely to be 'brought face to face in his academic studies with the fundamental dilemmas of humanity' (p. 75) than an undergraduate Science student is likely to be. Thus the generation of 'emotional conflict' and the challenging of 'personal values' may be more common in Humanity and Social Science subjects.

With this point in mind, students may express commitment in personal and/or academic terms; what is important is that the committed

student personally values (Ford, 1979) what he or she is learning. Involvement is more than just energy – it is the energy that is generated from a sense of commitment which can be directed into a range of behaviours and reflects an integration of affect and cognition (Adams, 1979; Ford, 1979).

Klinger (1977) made an important connection between commitment and behavior. According to Klinger, behaviour is directed to achieving a wide range of goals (e.g. 'to win a trophy, obtain a contract...improve a relationship with a close friend' p. 36-37). He argues that humans (and higher animals have an inner

> 'process that is specific to the goal and that continues to operate until the goal is achieved or abandoned. Without such an inner process, people would stop striving for the goal as soon as they were out of sensory touch with it and things associated with it. They would be almost as easily sidetracked as a mosquito. The inner-goal related process keeps them alerted to new possibilities for achieving their goal' (p. 36).

The onset of this inner process is termed commitment. Although not explicitly using the term involvement in this context, Klinger argued that once an individual becomes committed to a goal (as opposed to an incentive[15]), the person is likely to engage in behaviour to seek the goal. Once engaged in this process the person is more 'inclined to notice cues that bear on it, to remember them , to think about them' (p. 305). It is interesting to note the similarity of these behaviours with the involvement activities mentioned above.

SUMMARY

To summarise, involvement is defined in this thesis as a *commitment expressed through active engagement with the task itself*. In this definition it is commitment that is the necessary but not

sufficient element. An involved student must express his/her commitment in active terms. As Astin (1984) and Miller (1977) make clear, a key aspect of involvement is activity. A valid concern is the translation of feelings into actions by involved students. The focus of attention is the task itself rather than specific learning goals such as demonstrating competence. No reference is made to students' goals or motives. It seems likely that involvement as defined here is consistent with intrinsic motivation, however there may be situations where extrinsic motives do allow involvement to develop (Biggs and Telfer, 1987).

The definition stated above does not refer to specific involvement behaviours in the way that Miller (1977) does. It is the student who chooses his/her learning behaviours. This is based on an individual interpretation of commitment. There may be some relation between study orientation or concept of learning and the level of activities an involved student chooses. The result of involvement in terms of learning outcome will depend on the quality of activity used. For example, involved students who employ a deep approach are likely to gain a deeper understanding of course material (Marton and Saljo, 1984) as well as Ford's personal meaningfulness. Students who implement involvement activities that are consistent with assessment demands are likely to find that involvement is positively related to academic performance.

INVOLVEMENT AND MOTIVATION

The previous section examined a range of research and discussion directed at involvement. Involvement has been likened to integration (Terenzini et al., 1984), effort, time on task (Astin, 1984) and attention (Fisher et al., 1980). In the course of the argument a definition of involvement was proposed which integrates affect and behaviour.

At first sight, involvement as defined here has much in common with motivation in that both concepts are concerned with factors that determine the direction of learning behaviour. Astin was aware of the similarity and noted that:

> 'the construct of student involvement in certain respects resembles a more common construct in psychology: motivation. I personally prefer the term involvement, however, because it implies more than just a psychological state; it connotes the behavioural manifestation of that state. Involvement, in other words, is more susceptible to direct observation and measurement than is the more abstract psychological construct of motivation. Moreover, involvement seems to be a more useful construct for educational practitioners. "How do you motivate students?" is probably a more difficult question to answer than "How do you get students involved?"(p. 301)

While I would certainly agree that involvement is a more useful educational construct than motivation, Astin's comments need clarification. In the quotation, Astin defined involvement in behavioural terms. However, in the same paper Astin suggested that the concept has an internal aspect that relates to feelings. For example, his synonyms for involvement included 'take a fancy to and show enthusiasm for' (p. 298) and although both are expressed as verbs they incorporate affective elements. On the one hand Astin is suggesting that motivation refers to internal, affective reactions while involvement is behavioural; on the other he presents a view of involvement that combines affect and behaviour[16]. Certainly as involvement is defined here, emotion and behaviour are an integral part of the concept of involvement.

Astin's definition of motivation is not consistent with that proposed by Deci (1980) who viewed motivation as behaviour; defining intrinsic motivation as 'behaviours which a person engages in to feel competent and self determining' (p. 6). Deci's position suggests a link between feelings and

behaviour. A similar point is made by Ames and Ames (1985) who indicate that a relationship may exist between cognition and affect (see also Parlett and Dearden, 1977). Thus one cannot distinguish motivation from involvement by stating that the former is concerned with emotion and the latter with behaviour (or vice versa).

To separate involvement from motivation one must first identify the essential elements of motivation and distinguish these from involvement (as defined above). Unfortunately motivation is at least as poorly defined as involvement. Entwistle et al. (1974) complained that motivation has been used as a 'conceptual charlady widely used for sweeping up variance in academic attainment' (p. 379). In Wilson's (1972) view, the confusion between motivational concepts such as extrinsic and intrinsic suggest that 'it is better not to use jargon-terms like 'extrinsic' and 'intrinsic', but to use ordinary English sentences of the form 'He wants to learn X because...' followed by as full and precise an account as we can give' (p. 101).

Peters (1958) criticised the confusion between a goal directed view of motivation and the causal factors underlying motives. He believed that much human behaviour could adequately be accounted for using goals or reasons for action[17]. He emphasised the active and rational nature of human behaviour. This stance has been further developed by more recent cognitive theorists[18]. Based on an assumption that humans behave rationally, cognitive theorists view belief as the source of a person's action. Differences do exist between theorists on issues such as the role of a need for achievement (Covington and Omelich, 1979), the importance of self determination (de Charms, 1984) or the nature of rationality (Nicholls, 1984; Weiner, 1979; 1983). However, an overview of the cognitive position reveals that goals such as achieving understanding (Weiner, 1979) or demonstrating competence (Dweck and Elliott, 1983; Nicholls, 1983) are a key feature of the position. An individual's goal directly affects their

learning behaviour. Thus in Peters' terms, goals provide the reason for action.

Associated with attempts to reach one's goal are a range of affective behaviours, such as satisfaction and enjoyment (Dweck, 1985). Peters was critical of what he perceived to be a confusion between reasons for action and their underlying causes. However, the combination of affect, cognition and behaviour is a feature of much of the attribution research (e.g. Harter and Connell, 1984).

Nicholls (1979; 1984) and researchers like Dweck (Dweck and Elliott, 1983) have refined the role of individual goals as a source of motivation. Nicholls' work has been largely concerned with achievement related behaviour. His own theoretical position is based on the premise that all learners wish to demonstrate competence. Nicholls suggested that learners do not share the same definition of ability. On one hand competence may be demonstrated by comparing one's ability favourably with others, or alternatively achieved by gaining mastery. Nicholls used this argument to provide a useful integration of much of the conflicting motivational research. Incompatible results (e.g. Atkinson and Raynor, 1974; Weiner, 1979) are largely the result of researchers' differing conceptions of ability. For example, Nicholls, (1984) argued that Atkinson's principles of motivation were based on the assumption that ability equalled effort (undifferentiated). On the other hand Weiner's work is consistent with the view that ability is capacity and is 'inferred from effort and performance' (p 41).

Not only are goals important in seeking opportunites to demonstrate competence they are also significant in intrinsic and extrinsic motivation (Entwistle, 1984). Wilson (1972) pointed to overlap and confusion between intrinsic and extrinsic goals. It has certainly been the case that persistence or re-engagement in a task without clear extrinsic reward is

assumed to reflect intrinsic motives (e.g Calder and Staw, 1975; Condry, 1977) with no account being taken of a student's affective response to a task (e.g such as intrinsic interest). In Wilson's view it is too simplistic to make a distinction between internal intrinsic motives and motives that lie outside the individual (such as receipt of marks). He suggested that intrinsic motivation has two elements. On the one hand an inner need for self esteem (similar to Deci, 1980) and on the other, a personal interest in the content.

To sum up, motivation research (from a cognitive perspective) is largely directed at describing individual goals and identifying a range of attributions, beliefs, expectations and affective responses (e.g. guilt) that are associated with these goals.

A range of goals with relevance for the quality of learning have been proposed in the literature.

1. Demonstration of mastery to self - associated with interest

2. Intrinsic interest in the content - engrossed in the material[19]

3. Demonstration of superior ability - termed ego involvement by Nicholls (1984).

4. Desire to please significant other (e.g. teacher, parent) suggested by Harter and Connell (1984) and termed 'social solidarity' by Maehr (1984).

5. Desire to obtain extrinsic reward (e.g. Biggs and Telfer, 1987).

The discussion so far has drawn attention to the apparent similarity between involvement, with its stated relationship between feelings, and behaviour and motivation. This similarity is particularly marked for intrinsic motivation which reflects a concern with learning as a goal in its own right. The following section examines intrinsic motivation in some detail.

Intrinsic motivation has been the focus of considerable research interest (e.g. Condry and Chambers, 1978; Deci, 1980; Dweck, 1985). In an

influential paper, White (1959) argued that the concept of a need to cope with environmental demands provided a more realistic account for behaviours such as exploration and curiosity than the earlier homeostatic drive theories had done (e.g. Hull). However, perceptions of intrinsic motivation differ. Researchers place differing degrees of emphasis on the role of White's suggested need. For example, Deci (1980) suggested that intrinsic motivation reflects the need for self determination and competence. By 'conquering challenges or reducing incongruity' (p. 61) the individual achieves a sense of satisfaction resulting from feelings of self determination and competence. On the other hand, Dweck and Elliott (1983) stressed the importance of the goal of mastery as providing the direction for intrinsically motivated behaviour.

Entwistle (1984) identified two elements in intrinsic motivation:

1. Learning because of interest and perceived relevance; a definition that has much in common with Nicholls (1979) concept of task involvement.

2. Learning to be successful; Entwistle's second element embodies a hope for success.

Only the first element is consistent with Peters' (1958) view of intrinsic motivation as being directed at learning for its own sake.

Hope for success and fear of failure are two motives suggested by Atkinson (Atkinson and Raynor, 1974) which comprise need for achievement. However, both 'fear of failure' and 'hope for success' may be consistent with Nicholls differentiated view of ability. Students with a 'low perceived ability will only expect to succeed on normatively easy tasks' (p. 49): at least in this case the student can avoid demonstrating his/her incompetence (fear of failure). A student who has a high perceived ability will expect to succeed and will seek out tasks where there is a moderate chance of success (hope for success).

Entwistle (1981; 1984) made specific mention of competence motivation 'which describes the way achievement enhances future performance' (Entwistle, 1981 p. 193). Confusion with intrinsic motivation arises here as both forms of motivation share a common goal(i.e. success). Presumably competence motivation relates more to success as measured normatively, thus reflecting a differentiated view of ability (Nicholls, 1984). According to Entwistle intrinsic motivation is more concerned with mastery or understanding.

In his discussion of motivation, Entwistle appears to be attempting to combine needs and goals. On the one hand he identifies intrinsic and extrinsic goals and on the other includes two motives associated with a need for achievement. The position of competence motivation is unclear but seems to reflect a need as 'the positive orientation towards learning created by the repeated experience of successful learning activities' (Entwistle, 1984 p. 7) suggests that a sense of competence provides some stimulus to learn.

Furthermore, Entwistle (1981) suggests some kind of hierarchical relation exists between needs and goals.; 'where neither of these forms of motivation (hope for success and fear of failure) is dominant, the approach to learning may be explained in terms of the relative strengths of extrinsic and intrinsic motivation' (p. 197). The problem here is that intrinsic motivation appears to combine need and goal. As Entwistle (1984) clearly states, 'intrinsic motivation takes two forms, one in which learning is explained by interest and perceived relevance, and another generally described as achievement motivation' (i.e. hope for success - is one motive of need for achievement) (p. 7).

In his description of motivation, Entwistle does not discuss Nicholls' goal of demonstrating competence to others. The competence motivation identified by Entwistle is more closely related to Nicholls view of

perception of ability where the experience of learning contributes to individuals' view of their own competence.

Extrinsic goals are also an important motivator (Biggs and Telfer, 1987). According to Entwistle (1984) extrinsic motivation reflects a desire to attain external (to learning itself) goals such as high marks. Harter and Connell (1984) combine a desire to please the teacher to this, while Biggs and Telfer (1987) term is social motivation .

Learning, albeit qualitatively and quantitatively different under each goal condition, is obviously taking place in all the examples outlined above. Key motivation questions concern clarification of the students' goals, demonstration of why these goals are important and the effect they have on the process of learning.

The following three points illustrate why questions concerning involvement are somewhat different in terms of their focus.

1. Involvement is not defined in terms of behavioural goals, although its presence may, as Biggs and Telfer (1987) suggest lead to re-definition of one's goal. According to Biggs and Telfer, other forms of motivation, particularly instrumental (i.e. extrinsic) in the form of positive reinforcement, may encourage a student to become involved which in turn changes the focus of the motivation to intrinsic. Involvement increases as the learner becomes more intrinsically motivated. Biggs and Telfer defined involvement as a focus of attention and although he did not explicitly state it, Biggs suggested that a student is involved if they are recoding material out of interest. As the student becomes more involved, recoding takes place. Apparently the student moves from a surface to deep approach. The authors argue that involvement is necessary if a student is to become intrinsically motivated. However, it is not clear why a student should move towards recoding if not already intrinsically motivated (i.e. interested in the task itself). One possible explanation is to satisfy assessment demands.

Biggs and Telfer suggest that positive reinforcement may encourage students to increase their involvement. The literature on the relation between extrinsic and intrinsic motivation is still unclear as to the effect extrinsic motivation has on level of interest (e.g. Bates, 1979). However, the general view seems to be that extrinsic motivation is in conflict with intrinsic motivation particularly if the task is perceived as interesting in itself (Calder and Staw, 1975; Ryan et al., 1985). This seems to be because of the learner's focus. In the extrinsic situation the student is focusing on the goal (e.g. receiving praise) and under intrinsic conditions, the focus is on the task itself. However, in cases where the task is uninteresting or the reward relates to task performance, it can be argued (from an attribution perspective) that some learners gain a sense of satisfaction from the experience of positive reinforcement. The positive feelings may lead to the development of interest in the task itself.

Thus one can be involved without having an intrinsic reason for studying. Involvement as a commitment to actively participate in a task may be consistent with a range of internal and external goals. Involvement refers to an individual's commitment to engage with content that is significant to them and to learn in an active way; it does not necessarily relate to a particular goal. Conversely, a learner may have an intrinsic motive but not be involved. This situation may arise if the contextual conditions (such as anxiety-provoking assessment demands) preclude the development of personal commitment and prevent the application of active participation.

2. Involvement reflects a response to a particular set of personal and contextual circumstances, while motivation reflects a set of enduring personal characteristics or traits (Atkinson and Raynor, 1974; Taylor et al., 1980; Maehr, 1984) similar to those of personality dimensions. Motivational behaviour in any one situation may be influenced by the degree

of challenge present in a situation (McKeachie et al., 1986). Challenge is just one of five student-centred dimensions[20] suggested by Harter (cited by McKeachie et al., 1986) and all reflect enduring personal preferences. 'Each dimension can be conceptualised as a continuum along which individuals can vary. The challenge dimension refers to the individual's preference for challenging tasks or easy tasks' (McKeachie et al, 1986 p. 53).

To a large extent, motivation reflects internal traits such as a personal need for competence or self determination (Deci, 1980), personal goals (Nicholls, 1984), the value a person ascribes to these goals and/or perceptions of ability (Dweck, 1985). As Dweck argued 'it is not the particular events themselves that affect intrinsic motivation, but the events in the context of learning versus performance goals, with the same event potentially having opposite effects in the two goals' (p. 294). The enduring nature of motivation is expressed clearly by Entwistle (1984) who claimed that,

> *'These forms of motivation (e.g. extrinsic, intrinsic) are describing learning in terms of traits which are the habitual forms of satisfaction derived by different people from their experiences of learning (over a period of time)...some anxious people seem to go through their education, driven more by a fear of failure than by a hope for success'* (p. 7).

3.   Involvement is directed towards a specific task rather than the achievement of a general feeling of mastery or competence as is motivation (e.g. Deci, 1980). Although the role of context is increasingly emphasised in motivational research (e.g. Nicholls, 1984). Nicholls suggested that 'we do use different conceptions of ability in different situations' (p. 41). This argument provides justification for Nicholls' two conceptions of ability however the adoption of a particular goal (e.g. differentiated) determines a person's reaction to the context rather than interaction with it. Furthermore, Nicholls' concept of task orientation reflects a definition of

ability that applies across a range of learning tasks. Similarly, although Deci (1980) certainly argued that individuals have a need to seek challenge, this is generalised across tasks. As argued above by Entwistle (1984) learning experiences are significant in the development of motivation but this refers to a more general experience of success or failure rather than the response to the demands of a particular task. Involvement activity is focused on one task and may reflect specific interest or the challenge provided by that situation.

Writers such as Parlett and Dearden (1977), and Wilson (1972), have argued that motivation is such a wide term and as such has lost its meaning. It is therefore more appropriate to look more closely at concepts like involvement that concern a specific response to personal and contextual factors. Involvement questions are concerned with individual perceptions and contextual influences on the learning process of involved and non-involved students.

INVOLVEMENT AND LEARNING OUTCOME

The belief that involvement should be encouraged is a common theme in the literature. The influence of learning on involvement has been seen directly (i.e. the more involved a student is, the more they will learn Astin, 1984; Fisher et al., 1980) or indirectly by suggesting that involvement increases motivation which encourages students to engage in a range of learning activities (Beakley and Chilton, 1972; Biggs and Telfer, 1987). The exception to this is Terenzini's (Terenzini et al., 1982) work which views learning outcome as an integral part of classroom involvement.

This section discusses the learning outcomes that have been associated with student involvement. The outcomes can be categorised broadly as product (quantitative or qualitative) and process. In other words the *what* and *how* of learning.

INVOLVEMENT AND LEARNING AS PRODUCT

Fisher et al. (1980) demonstrated that time on task (involvement) was positively related to achievement test scores in Reading and Maths. The longer students were observed to pay attention to a task, the more they recalled. However, it is interesting to note that high-scoring students (termed 'learning students' by Fisher) also engaged in evaluation of their own learning processes and level of prior learning which suggests that such awareness may also contribute to amount learnt. Pace (1982) certainly found that quality of effort was a better predictor of academic performance than time on task. Unfortunately, Pace did not discuss the form of assessment used to measure academic achievement. It is necessary to know whether the assessment used in a particular study measures amount or quality of learning. It is only then that it is possible to consider whether involvement is positively related to quantity or quality of learning.

Astin suggested that 'the amount of student learning and personal development associated with any educational program is directly proportional to the quality and quantity of student involvement in that program'. (p. 298). In other words, students will learn more if they spend more time studying and make use of active learning strategies. Although not explicitly stated, students would be likely to produce high marks in tests that measure the amount of learning. However, if one examines the argument in more detail it appears that form of involvement (e.g. athletic, academic) plays an important role in determining the level of academic or personal development that occurs from involvement. For example, in Astin's view students who are heavily involved in an honours programme may develop relationships with faculty but be isolated from their peers.

Furthermore, Astin makes the point that 'excessive' involvement[21] may be counter-productive, resulting in students who are workaholics or obsessive-compulsives. What Astin really says is that moderate amounts of

involvement directed towards a range of university activities will result in positive academic and personal development, thus, more is not necessarily better. Astin related involvement to amount of learning but is involvement related to depth of learning also?

Astin (1984) himself suggests that it may be. An active learner who reviews and comprehends reading assignments seems more likely to understand the ideas in that assignment than one who day-dreams. Miller (1977) makes a similar point. Beakley and Chilton (1972) produced evidence that supports this suggestion. In a paper entitled *'Involvement increases motivation to learn',* they attempted to increase the motivation for learning of first year Engineering students. This was to be achieved by involving the students in realistic projects that they would find both 'instructive and enjoyable' (p. 876). Beakley and Chilton hoped that by encouraging students to become more actively involved, they would not only achieve better and longer term retention of factual material, but also gain a better understanding of important engineering concepts. Unfortunately, their results were provisional and only related to test marks. Students in the 'involved' class obtained scores 15% higher than students in more traditional classes. However, although students appeared to enjoy the new programme (95% preferred that method of teaching) there is no indication that they were actually more involved than the students in the traditional lecture class.

In a wide ranging study, Terenzini et al. (1982) examined the effect a range of institutional factors had on student performance as measured by grade point average. While the best predictor of first year GPA was previous school achievement and academic aptitude, the level of social and classroom involvement was a significant contributing factor. Of slightly less importance (but still significant) was frequency of staff and student interaction (academic or career discussion). Terenzini clearly viewed

frequent experience of mastery of course content both in and out of class as an integral part of the definition of involvement itself (refer items 2 and 3 in classroom involvement scale given on p. 70). The wording of these items makes it impossible to say whether the learning outcome is quantitative or qualitative.

Miller's (1977) main concern was with definitions of involvement; however, he did suggest that active participation is more likely to result in meaningful learning. From this study there is a suggestion that involvement has a beneficial effect on learning quality.

Unfortunately, the authors discussed here are not talking about the same concept. Involvement, to Fisher and his colleagues, means time, Astin views involvement in terms of an amount of energy, the key aspect of which is behaviour. Terenzini, on the other hand included learning outcome as an item in his classroom involvement scale and Miller described a range of definitions which included activity as well as personal commitment.

INVOLVEMENT AND LEARNING PROCESS

Consistent with the view that involved learners are active participants in their learning is the view that involvement facilitates the development of academic skills. The important point to note is that the skills associated with involvement appear to be examples of the deep approach to learning. One may assume that the deep approaches will assist students to reach a deep level of learning outcome. One does need to ask whether all involved students engage in such high quality processing.

In addition to their interest in academic performance, Terenzini and his colleagues (Terenzini et al, 1984) examined the relationship between involvement and academic process[22]. In general the best predictor of academic skill development was classroom involvement and high school achievement. Frequency, and to a lesser extent, nature of contact with staff, was of significance particularly in the third year of study. A

relationship was also noted between the Academic content scale and classroom involvement. This finding is not unexpected given that two out of the five items contributing to classroom involvement were concerned with the degree to which the student felt they had learnt something in and out of class. Academic content and these items seem to be directed at content mastery. The authors concluded

> *'it would appear that the quality of students' classroom experiences may have a positive influence, not only on the extrinsic reward of academic achievement, but also on more intrinsic outcomes such as general intellectual growth and competence. There is some modest evidence to suggest that level of classroom involvement may also be positively associated with perceived personal growth'* (p. 106-107).

John Powell (1979) expressed concern at the failure of incoming students to adapt to the demands of higher education. Due to a combination of lack of individual preparation, unrealistic expectations and institutional factors such as large classes, many students restricted themselves to 'surviving the system' rather than engaging in 'the disciplined exploration of the world of ideas' (p116). In suggesting solutions for this perceived problem, Powell argued that it is crucial to help students 'to discover where their true interests lie and to foster the development of some semblance of genuine academic involvement'. (p116). He suggested that the development of academic involvement will lead to an improvement in students' experience of university and in the quality of learning. Powell is not alone in this view. Other writers have called for course programmes that encourage student involvement (e.g. Beakley and Chilton, 1972; Steinaker and Bell, 1979; Stephen, 1981; Brandes and Ginnis, 1986).

Newell (1984) commented on a National Education Institute report[23] which calls for attempts to increase student involvement at university with the aim of restoring the integrity of the bachelors' degree programme,

which according to the report, has been overwhelmed by an emphasis on vocational training to the exclusion of liberal education. The authors were committed to the view that students focus too early on a narrow occupational path with little opportunity to examine issues that affect themselves and society as a whole. The subject matter is of less importance. Involvement comes from courses that are both stimulating and have high but clearly stated expectations. The outcomes of involvement (defined in terms of engaged interest and participation) are 'a quest for knowledge, reflection about the nature of themselves and society and 'motivation to go beyond required assignments' (p. 8) and a commitment to lifelong learning. Involvement is seen as expended effort but also as the processing of course material to a degree where it becomes personally meaningful. The responsibility for the development of involvement is placed with the university teachers. The authors of the report call on them to provide more detailed feedback and spend more time in discussion with individual students. Calls for increased involvement are based on the assumption that if one institutes organisational change and improves the communication between teachers and students, involvement will naturally follow. Students will become interested in their studies and seek resources beyond those demanded by assessment requirements. Such a view, while laudatory in that it accepts the role that academic staff play in creating a fertile climate for involved study, does not acknowledge the importance of students' own orientations to study and perceived study goals as factors that may also determine involvement. The criticisms of vocational courses are inconsistent with the statement that subject matter is unimportant. If, as they state, involvement develops under stimulating conditions it should be possible to design vocational courses to fit this requirement. It seems more likely that it is the students' vocational educational orientation that

limits their involvement rather than vocational courses per se (Nicholls et al., 1985).

OTHER OUTCOMES

The benefits of involvement for various aspects of learning have been discussed above. Several researchers have suggested other outcomes may result from involvement in study.

Ford (1979) moves beyond the statement that personal commitment encourages a deep approach. In his view an even more significant outcome is 'continuing motivation, attitude, and belief formation and change, personal valuing of learning experiences, and the development of value systems and personal commitment'. (p. 148) The relation between involvement and continuing motivation is one that is also made by Newell (1984).

Several authors have suggested that involvement has a direct effect on the level of motivation (Biggs and Telfer, 1987; Beakley and Chilton, 1972). According to Biggs and Telfer, a high level of involvement in study as demonstrated by 'recoding' (p. 116) will result in increases in intrinsic motivation.

LACK OF INVOLVEMENT

Given that involvement is associated with a range of positive experiences and outcomes it is not really surprising that lack of involvement is seen as undesirable. According to Covington (1984) student under-achievement can be related to a lack of involvement and inactivity. Goffman (1957) suggested that non-involvement can result in boredom and at worst total alientation. These are outcomes which obviously have serious implications for students' learning experiences.

A range of outcomes have been discussed. Comparisons between the various studies are difficult given the range of definitions of involvement. A finding by Miller (1977) gives insight into the confusion between

definition and outcome. He identified involvement activities which ranged in quality from attending lectures to indepth study. He noted that the activities students believed to be part of a definition of involvement were influenced by the objectives and demands of their lecturers. Miller concluded that if lecturers encouraged students to work at deeper levels of learning they would be more likely to get high quality outcomes. It may be that the outcomes expressed in a range of research studies is largely an artifact of the range of definitions used and inevitably the form of measurement used.

There is certainly considerable evidence to suggest that time on task is positively related to achievement (Carroll, 1963; Bloom, 1976; Fisher et al., 1980; Gagné, 1985). However, one needs to consider whether time on task is an adequate definition of involvement. It has been argued above that it is not. One can therefore consider the possibility that there is a range of learning outcomes that may be associated with a broader definition of involvement that considers the students' commitment to the task as well as the actual learning activity implemented.

The main point to consider is whether involvement, either defined in behavioural terms, or as personal commitment or interest improves both the experience, and quality and quantity of learning. There is some evidence that it does. However, further investigation is needed. Research is also needed to examine the relation between individual definition and outcome.

INVOLVEMENT AND LEARNING CLIMATE

The work of Terenzini et al. (1984) suggests that one can talk about a climate of learning that encourages and supports student involvement. Ramsden has established the importance of a student's perception of learning context on their approach to learning and it is interesting to note that Ramsden found that students were more likely to be involved in their

study when studying in departments that were rated highly on factors such as 'good teaching' and 'freedom in learning'. He commented that

> *'Departments appear to provide contexts within which students find it easier to develop an interest in the subject matter and use approaches aimed at understanding...students differ greatly in what they want to achieve from their studying. If they want to make the academic content personally meaningful these departments will facilitate such development'* *(Ramsden, 1984 p. 161).*

This statement is important because it suggests that context of learning combines with personal factors to produce a particular approach to learning. Personal input has been recognised as an element in classroom climate (e.g. Walberg and Anderson, 1968) and it is therefore proposed that a combination of contextual factors (such as those mentioned by Ramsden), and personal characteristics, contribute to a particular learning climate that may exert a positive or negative effect on student involvement. To conclude, the following section proposes some contextual and personal factors that may contribute to learning climate as it affects involvement. Obviously there is likely to be considerable interaction between these variables.

PROPOSED CONTEXTUAL AND PERSONAL FACTORS

1. Contextual factors

a. Organisation of classes to facilitate:

i. Non threatening discussion

ii. Maximum time on content – minimum time on adminstrative matters

iii. Opportunity for everyone to speak

b. Smaller classes

c. Flexibility within course prescriptions to cater for individual learning styles.

d. Lecturer goals which place importance on the development of student interest and enthusiasm.

e. Opportunity for students to discuss ideas with staff

f. Relevant material. This is likely to directly affect the value a student places on the content.

As mentioned above, involvement is closely associated with emotional elements. How one feels about a course will directly affect commitment (i.e. whether the student *wants* to become involved). Thus, one can identify affect as an element that may create a favourable or unfavourable climate for the development of involvement.

2. Personal factors

Personal factors contributing to the learning climate include

a. personal interest possessed by the student.

b. positive affect towards the course or subject matter.

c. availability of deep strategies which are more likely to make learning enjoyable (Svensson, 1976).

CONCLUSION

As discussed above, a range of writers and researchers have argued that involvement (at a moderate level) should be encouraged in university students. Unfortunately few have given detailed consideration to the nature of involvement itself. Astin (1984) and Terenzini et al. (1982; 1984) describe a number of involvement forms; however, these can be subsumed into two major involvement categories: institutional and academic involvement. Academic involvement provides the focus of this thesis. In the course of this chapter it has been argued that while involvement has been variously defined as time on task, integration, behaviour and energy, studies that have directed their attention to student and teacher perceptions of involvement have defined involvement in a way that combines affect and behaviour. An integration of Carl Rogers' views on learning and the work of Social Interactionists such as Goffman with the involvement

research described above, resulted in the following definition of involvement: *Commitment expressed through active engagement with the task itself.* Although Miller (1976) and Adams (1979) discussed specific involvement activities, it was argued here that personal factors such as a student's approach to learning would determine the range of involvement activites selected. Clearly a student with a predominantly surface approach may select qualitatively different activities to those adopted by an individual using a deep approach. Furthermore, commitment itself may be strictly academic or include a personal dimension. According to Ford (1979) personal commitment is associated with positive attitudes to lifelong learning and long term retention. Thus involvement reflects a frame of mind that is directed towards a particular learning task rather than the activities themselves.

Despite some possible confusion with the concept of motivation, involvement is distinct because it is not goal-specific, but is a specific response to a set of personal and contextual factors, it is task specific and more directly influenced by contextual changes than the more enduring trait of motivation.

From the arguments presented above, involvement was shown to be a key variable in determining high quality learning. Furthermore, involvement activity appears to have much in common with deep processing. One might argue that students can implement a deep approach to learning while uninvolved. However, according to Ford (1979) , involvement is essential if these students are to develop a sense of personal meaning.

With these points in mind the final section of the present chapter sets out the aims of the research project.

AIMS AND OUTCOMES

The research discussed above has demonstrated that for a variety of personal and contextual reasons, students respond to the demands of university in different ways. Entwistle (1981) argued that situations affect students differently rather than the more simple assertion that situations affect students. This statement can be extended to suggest that individual students *perceive* situations differently. It is the nature of the perception rather than the actual context itself that determines the approach a student will employ and thus the quality of the resulting outcome (Svensson, 1977).

Such an argument clearly views the learner as an active participant. The learner's style and concept of learning as well as emotions and interests are likely to contribute to the nature of input that person puts into learning activities. A factor that combines these affective and behavioural elements is involvement.

Students give different definitions of involvement (Miller, 1977; Adams, 1979). While students tended to focus on involvement in terms of time and effort such definitions vary in quality and quantity. Furthermore, students studying in different subject areas tended to emphasise different aspects of involvement (Adams, 1979).

A major focus of this study is to examine student perceptions of involvement and determine whether differences are related to personal factors such as orientation to study and educational orientation. The definition given above integrates commitment with active involvement behaviour. It is logical to suggest that commitment and active learning are consistent with a deep approach to learning (Ramsden, 1985). However, some students may perceive involvement in different terms. The behavioural aspect of involvement may reflect a student's approach. As Biggs (1988) showed, a student using a surface achieving approach,

implements rote learning strategies in an organised way. In this example an involved student may enthusiastically engage in reading large quantities of information, taking detailed, descriptive notes but at a surface level. Involvement behaviour may also reflect contextual factors, thus a student with a heavy workload will have limited time available for involvement. In other words involvement behaviour may differ between students and within a student in differing contexts. Given the role of perception in affecting student learning activities it is necessary to systematically examine the nature of involvement as it is perceived by students.

A central assumption of this thesis is that involvement has a direct effect on the quality of learning. A number of writers have suggested that depth of understanding and cognitive skill acquisition are greatly aided by student involvement (e.g. Powell, 1979; Astin; 1984; Terenzini et al, 1984). This assumes of course that all involved students will engage in deep learning. However, an intention to understand may not be realised in practice as the result of either inadequate prior learning or failure to effectively implement deep processing strategies. A relationship may therefore exist between the quality of a student's involvement behaviour and the quality and quantity of learning.

A further area of interest was to determine why students become involved, why others either fail to become involved or reduce their commitment to a course and what factors sustain involvement over time. The latter objective suggests a dynamic learning process reflecting changes in goals as well as intellectual development and concept of learning. Ramsden (1985)has demonstrated that while study orientation is relatively permanent, it is not static. Changes in orientation reflect perceptions of changing contextual demands. Student involvement may also change over time. The study is a longitudinal one to allow examination of

changes in factors which seem to be important in the development of student involvement.

The aims of this study are as follows:

1. To clarify the nature of involvement in learning as perceived by students.

2. To discover whether a student's definition of involvement is related to their orientation to study (Entwistle and Ramsden, 1983) or educational orientation (Taylor et al., 1980).

To achieve this objective it will first be necessary to:

a. identify students' educational orientation.

b. identify students' general approach to study as measured on the approach to study inventory.

The results of this study will be compared with those obtained by other researchers in the area.

3. To determine whether involvement is perceived by students to affect the quality and/or quantity of their learning outcome, and to examine how involvement acts to improve quality and quantity of learning.

4. To identify the personal and contextual factors that students perceive to be influential for involvement development and change.

5. To examine the implications of these results for teaching practice and course design.

NOTES

1. Both Kerwin and Terenzini developed scales designed to measure involvement. Their respective meaning of the term can only be inferred from the individual scale items. Kerwin's student involvement scale comprised questions relating to the degree to which an instructor created a climate that encouraged students to feel valued and required their participation in course development. Terenzini et al. (1982) developed social and classroom involvement scales, these are discussed in detail on p. 70.

2. Miller's work is discussed in detail on p. 76.

3. Astin does not clarify what he means by 'honors programs' which is unfortunate given the wide variety of programmes offered worldwide. His comments about these students ('students who participate in honors programs gain substantially in interpersonal self-esteem, intellectual self-esteem and artistic interests' p. 303) suggest that Astin's honors students are invited to participate in such a programme which may account for their enhanced self-esteem.

4. According to Astin (1984), student-faculty interaction refers to discussion that takes place between students and academic staff.

5. Astin's concept of energy is based on that suggested by Freud where through catharsis, psychological energy is invested in outside objects or people.

6. Tinto (1975) suggested that a range of pre-college traits (e.g. high school achievement and parents' education) lead to varying levels of goal and institutional commitment. A student's level of integration is the product of the interaction between the student's commitment and elements in the academic and social institutional environment.

7. Terenzini et al. (1984) included the following variables in their measure of academic integration:
    (1) faculty relations scale, (2) faculty concern for student development and teaching scale, (3) frequency of contact with faculty for academic purposes (4) the classroom involvement scale. Social integration included (1) peer relations scale (2) frequency of contact with faculty for non-academic purposes (3) amount of time spent in organised extra-curricular activities (4) social involvement scale.

8. The closest Terenzini et al. (1982) come to a definition of involvement is in the following statement: 'If the college experience influences positively the personal and academic growth of a student, then the student who is more integrated into (or "involved" in) the academic and social life of an institution is more likely to grow in a number of ways than is the student who is less *integrated or involved*' (p. 89) (emphasis mine).

9. The 'vaguely termed phenonemon "classroom climate"(Bidwell, 1973 p. 435) is largely based on the theory that a classroom operates as a social system (Getzels, 1969) and combines structural and affective elements that influence cognitive and affective learning. Attempts have been made to develop inventories that will reliably measure climate (e.g. Withall, 1949; Anderson, 1970) and include dimensions such as goal direction, satisfaction and formality. Parallels can be seen between this work and that of Ramsden's (1984) work on learning

context which tends to focus on the structural aspects of climate as defined by Walberg and Anderson (1968). On an institutional level (at school and university) interest has also been directed at a more general environment (Getzels, 1969) or school ethos (e.g. Rutter et al., 1979) that reflects collective values or commonly held values. As with classroom climate, ethos also has an effect on the behaviour of those within the institution.

10. The degree to which good study habits are observable is debatable particularly given Biggs' (1988) recent work on the role of metacognition in effective study skills.

11. See p. 85 for a discussion of commitment.

12. Involvement as the direction of energy has much in common with Maehr's theory of personal investment (Maehr, 1984). According to Maehr, personal investment is the direction of resources (i.e. time, talent and energy) to a situation that has meaning to the individual. A situation is deemed to have meaning if it is consistent with beliefs about the self and/or is relevant to personal goals (e.g. attainment extrinsic rewards) and is a realistic activity for that person (e.g. acceptable within peer group). Personal investment relates more specifically to Rogers (1969) description of cognitive learning as Maehr does not include personal valuing of information – an affective aspect – in his discussion. Meaning and valuing are both important to the view of involvement given here.

13. In line with the cognitive emphasis in his description of personal investment, Maehr (1976; 1984) argued that 'viewing a task as interesting in its own right or as an opportunity to enhance one's competence will likely eventuate in continuing motivation. Doing a task to please others or to earn a grade is not likely to foster a love of learning for its own sake' (Maehr, 1984 p. 130). Mention is not made of personal meaningfulness.

14. Ford (1980) examined the benefit or value that students felt they had gained from their essays. Valuing was categorised (by Ford) into intrinsic and extrinsic valuing. In the former, the 'value derived related principally to the specific subject content of the essay' (p. 66). It is important to note that the student referred to personal benefits and well as intellectual insights. Extrinsic valuing 'included statements...not relating to the subject content of the essay and/or uncertain, little or no value derived' (p. 66).

15. According to Klinger, 'people are organised around pursuing and enjoying objects, events, and experiences that are emotionally

compelling for them, which I shall call incentives' (p. 4). Such incentives may not actively be sought although once these are identified as goals, behaviour is then directed at attaining them. It should be made clear that Klinger does not believe that this process is necessarily a conscious one.

16. In addition to inconsistencies in the affect-behaviour distinction between motivation and involvement, Astin does not say why motivating students is more difficult that getting them involved. As defined by Astin, involvement is certainly easier to measure and observe than motivation. The relative ease of actually developing student involvement over motivation is not supported by his arguments.

17. Wilson (1972) argued that Peters, while providing a valuable contribution to the discussion of motivation, presented some misleading arguments. Specifically this relates to Peters' rejection of causal theories of motivation. Wilson argued that 'people can have motives without our wanting or needing to inquire about them' (p. 94).

18. See Ames R. and Ames C. (Eds) Research on Motivation in education. Vol 1. *Student motivation.* Academic Press, Orlando,1984 for a detailed discussion of the cognitive position.

19. The first and second goals have been combined by both Nicholls (1984) and Maehr (1984) as task orientation and task goals respectively. Both writers stress the importance of the learner's focus on the learning task rather than an external goal or person.

20. The five dimensions suggested by Harter are as follows: challenge, curiosity, mastery, independent judgment, and internal evaluative criteria.

21. Astin's examples of 'excessive involvement' appears to reflect involvement as a commitment of time (i.e. the workaholic, the academic grind). In other words, a student who devotes all their time to academic study.

22. Items included in Academic Processes scale covered ability to evaluate ideas, material and methods critically; ability to think analytically; ability to formulate creative/original ideas/solutions; ability to learn how to learn; ability to learn on my own.
Items included in Academic Content covered mastery of fundamental principles, generalisations or theories, factual knowledge (terminology, methods, trends); exposure to a variety of new intellectual areas. (Terenzini et al., 1982 p. 91-92).

23. Study group on the conditions of excellence in American Higher education. *Involvement in Learning: Realising the potential of American higher education* National Institute of Education, 1984.

CHAPTER 3

METHODOLOGY

The methodology chapter is divided into two main sections. The first describes the pilot study and the second gives details of the methodology used in the main study.

PILOT STUDY

The pilot study was designed with three purposes in mind. The first was to establish whether any relationship existed between involvement and the approach to study dimensions (Ramsden and Entwistle, 1981; Entwistle and Ramsden, 1983). Secondly to determine the practicality of gathering data on general approaches to study. The third purpose was to trial the Approach to Study Inventory to establish its suitability in the New Zealand secondary school context.

SAMPLE

Seventh form students from two Wellington state secondary schools took part in the pilot study. Sixty seventh formers attended a co-educational school and a further fifty five students attended a single sex boys school.

STRUCTURE OF THE QUESTIONNAIRE

Because of timetabling considerations within each school, time available with the Seventh form groups was limited to approximately 45 minutes. Within this time students were required not only to complete the questionnaire but spend time in discussion with the researcher.

The structure of the pilot study questionnaire was determined by this time limit. As its principal purpose was to examine the relationship if any, between involvement and the approach to study questions, it was decided to reduce the length of the Approach to Study Inventory (ASI) by dividing it into four parts. Each section comprised questions measuring one of the

four study dimensions from the ASI (meaning, reproducing, achieving, and styles and pathologies). The bulk of the remaining 28 questions were designed to measure involvement.

Fifteen questions were written to reflect the categories of involvement as defined by Adams (1979) - accountable, interaction, experiential, decision-making. In addition there were two questions designed to measure educational orientation. Five questions were directed at Saljo's (1978) concept of learning (based on 'taken for granted' perspectives)[1]. A further four concerned strategic awareness and one question was designed to measure globetrotting (Pask, 1976). The wording of this question directly dealt with the problem of integrating ideas from a number of different sources, an aspect that was not dealt with sufficiently in the ASI. One further question concerned students ability to relate new ideas to those already known (for further details see Appendix A). Four versions of the pilot study questionnaire were used as illustrated in Table 3.1.

The four versions of the questionnaire were distributed equally between the 115 students. Unfortunately one achieving questionnaire was returned in an unusable condition thus reducing the sample size for that group to 27. All questionnaires were completed in school time with the researcher present. Once the forms had been completed a brief discussion took place on the suitability of the question wording and ability of students to generalise about their study strategies.

ANALYSIS

Analysis focused principally on the relationship between involvement questions and the ASI dimensions. This was done using correlational methods, the most useful of which was a fortran programme - 'nearest neighbours' - designed to look at patterns of association between questions. For each item the 10 questions with the highest and the 10 with the lowest correlations were given. The purpose of this was to build a

network of relationships between individual questions, for example, question A may correlate most highly with question B (0.45), however question B actually correlates most highly with question C (0.53). Question C also correlates with D (0.49) but D's highest correlation is with B (0.50). This pattern makes Question B the centre of a network as shown in Figure 3.1.

Table 3.1 Forms of Pilot Questionnaire

Forms of pilot questionnaire	question numbers 1 - 28	29 - 43/44
1	Involvement, concept of learning strategic awareness, educational orientation, globetrotting, relating ideas.	meaning approach
2	"	reproducing approach
3	"	achieving approach
4	"	styles and pathologies

Figure 3.1 Example of nearest neighbours interaction
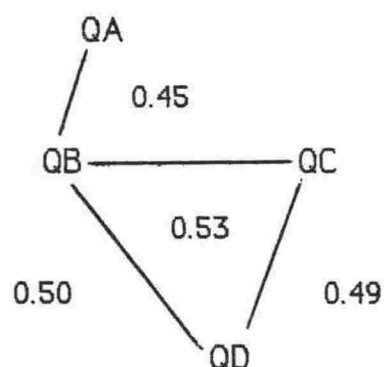
Correlation was also used to look at association between the involvement questions themselves (Figure 3.3).

Relationship of involvement and ASI questions

The 'nearest neighbours' analysis demonstrated a relationship between involvement and the ASI meaning dimension. Figure 3.2 reveals a clustering of questions relating to class discussion and active participation and those relating to wide reading and absorbtion in course content (Adams categories of experiential and interaction) with questions from the ASI measuring deep processing and relating ideas. One question designed to measure decision making is associated with deep processing and experiential involvement.

The relationship between the involvement questions themselves was further clarified by the analysis of all responses to questions 1-28 (n=114). Nearest neighbours analysis of the involvement questions revealed a cluster around question 20 (*'When I am learning something new I try to relate it to what I already know'*). This question concerned the integration of new material with existing knowledge (deep approach). Interactive involvement featured most clearly, particularly the association between questions concerned with participation in discussion (Figure 3.3).

A similar but even stronger pattern emerged from analysis of the students completing the involvement and styles and strategies questions. A rather complex network appeared. In this case there were two central points. The deep approach question (Q20) again emerged as a central focus along with an involvement question (Q17 *'I like to take an active part in class discussions'*.) Apart from one question directed at comprehension learning and another towards operation learning, the remaining questions further emphasised the links between involvement (interactive and experiential), strategic awareness and deep approach as well as one question designed to measure personal educational orientation (Figure 3.4).

Figure 3.2 Nearest neighbours analysis – meaning/involvement

13 I enjoy the chance to discuss ——————— ·41 ——————— 29 I usually set out to understand
   a topic I'm interested in with   thoroughly the meaning of what
   a teacher or school friend (I i)   I am asked to read (D)

   ·53

17 I like to take an active part
   in discussions (I i)

                  26 I would welcome the chance to become   ·47
   ·41   involved in decision making about the

12 Often I get so totally absorbed in   way classes are taught at university.
   what I am reading or working on   ·45   (I d)   ·48
   I find I have not left enough time
   to complete what I had planned to   ·52
   do (I e)   ·48

                       20 When I'm learning something new
               ·48   I try to relate it to what I already
16 I usually become more absorbed in   know (D r)
   my work the more I do. (I e)

   ·46   ·46   ·48

32 I generally put a lot of effort into
   trying to understand things which
   initially seem difficult (D)   15 During the last few years I have
                           read a lot of books covering
   ·50   widely differing topics (I e)

36 I like to work out several alternative
   ways of interpreting evidence or
   findings. (UE)

Key
I i Involve interactive   I e Involve experiential
I d Involve decision making   D r Deep approach relating ideas
D Deep approach (ASI)   UE Use of evidence (ASI)

Figure 3.3 Nearest neighbours analysis- Involvement (n=114)

13 I enjoy the chance to discuss
a topic I'm really interested
in with a teacher or school
friend (I i)

3 I normally have a good idea of
how well I have done in an essay
or test (S Aw)

·39

26 I would welcome the chance to
become involved in decision making
about the way classes are taught
at university (I d)

4 When I am presented with a new
problem I spend some time thinking
about how I am going to tackle it (S Aw)

·35

·35

·49

20 When I am learning something
new I try to relate it to what
I already know. (D r)

·36

·40

17 I like to take an active
part in discussions. (I i)

7 The courses I plan to do at University
will really challenge me as a person (PO)

·40

25 Even if I'm not actively participating
in a class discussion I always try to
think critically about what is being
discussed. (I i)

Key

I i Involve interactive
I d Involve decision making
PO Personal orientation

I e Involve experiential
D r Deep approach relating ideas
S Aw Strategic awareness

Figure 3.4 Nearest neighbours analysis – Involvement/Styles and strategies

·33

13 I enjoy the chance to discuss a
topic I'm really interested in
with a teacher or school friend
(I i)

·44

·42

25 Even if I'm not actively participating
in a class discussion I always try to
think critically about what is being
discussed (I i)

33 In trying to understand a puzzling idea
I let my imagination wander freely to
begin with, even if I don't seem to be
much nearer a solution (C)

·57

·49

·54

26 I would welcome the chance
to become involved in decision
making about the way classes
are taught (I d)

·64

·45

4 When I am presented with a new problem
I spend some time thinking about how I am
am going to tackle it (S Aw)

·57

·54

17 I like to take an active part in class
discussions (I i)

·45

·72

3 I normally have a good idea of how well
I have done in an essay or test (S Aw)

16 I usually become more absorbed in
my work the more I do (I e)

·53

·51

20 When I'm learning something new
I try to relate it to what I already
know (D r)

·53

24 I seem to be able to become
interested in most of the work
we do (I e)

·22

·47

34 I prefer to follow well tried
approaches to problems rather
than anything too adventurous
(OL)

7 The courses I plan to do at University will
really challenge me as a person (PO)

Key

I i Involve interactive
I d Involve decision making
PO Personal orientation
C Comprehension learning ASI

I e Involve experiential
D r Deep approach relating ideas
S Aw Strategic awareness
OL Operation learning ASI

While involvement, at least as measured by the pilot questions appeared to have strongest links with the meaning dimension there did seem to be some association with strategic approach and achieving motivation. However these questions did not link directly with involvement but through personal orientation and deep approach (Figure 3.5). It was also noted from nearest neighbours analysis of the achieving dimension questionnaire that a *separate* cluster of disorganisation and negative attitudes emerged although the correlations were lower and in some cases just below the cut off point of 0.40 (Figure 3.6). No involvement questions featured in this cluster, indicating low correlations between achieving and involvement questions.

The questions in the reproducing dimension clustered together with links to the low level concept of learning questions in the first section of the questionnaire (Figure 3.7). Exceptions were an experiential involvement question (Q22 *'At university I intend to become really involved in the topics that interest me'*). It may be that some students have good intentions about their study at university. Some of these individuals may currently adopt reproducing strategies. One also has to ask questions about their definition of involvement. The second exception was intended to measure strategic awareness (Q4 *'When I am presented with a new problem I spend some time thinking about how I am going to tackle it'*). This question correlated with items measuring extrinsic motivation suggesting an active, strategy directed at an external objective.

SELECTION OF QUESTIONS FOR MAIN STUDY (Q1)

With the above analysis in mind, questions that played a central role in the nearest neighbours analysis were included in the first questionnaire of the main study. (See Appendix A for asterixed questions).

Figure 3.5 Nearest Neighbours analysis - Achieve/Involvement

33 It's important to me to do really
well in my courses at University (AM)

·55

17 I like to take an active part in
discussions (I i)

·46

37 When I am doing an essay, project etc.,
I try to bear in mind exactly what that
particular teacher seems to want (SAp)

·46

·52

7 The courses I plan to do at University
will really challenge me as a person
(PO)

·50

13 I enjoy the chance to discuss a
topic I'm really interested in
with a teacher or school friend
(I i)

30 I enjoy competition: I find it
stimulating (AM)

·44

40 It's important to me to do things better
than my friends, if I possibly can (AM)

·60

·57

25 Even if I'm not actively participating
in a class discussion I always try to
think critically about what is being
discussed. (Ii)

·43

20 When I'm learning something new
I try to relate it to what I already
know (D r)

·53

26 I would welcome the chance to become
involved in decision making about the
way classes are taught at University(I d)

·47

38 If conditions aren't right for me
to study I generally manage to do
something to change them. (Sw)

·46

·50

1 When I am studying I set myself
targets (e.g. to read so many pages
to finish the chapter) and keep going
until I get there. (CL)

·40

3 I normally have a good idea of how well I have
done in an essay or test. (S Aw)

·51

·49

21 When studying the subjects I like most
I find I work very much harder (I e)

4 When I am presented with a new problem
I spend some time thinking about how
I am going to tackle it (S Aw)

22 At university I intend to become really involved
in the topics that interest me (I e)

Key

I i Involve interactive	I e Involve experiential
I d Involve decision making	D r Deep approach relating ideas
PO Personal orientation	AM Achievement motivation ASI
S Ap Strategic approach ASI	S Aw Strategic awareness

Figure 3.6 Nearest neighbours analysis - Achieving

31 Continuing my education is something
that is just happening to me, rather
than something I really want for
myself (NA)

42 I certainly want to pass the next set of exams
but it doesn'g really matter if I only just scrape
through (NA)

8 Sometimes it pays off to learn things
by rote, other times I like to go really
deeply into a topic (S Ap)

·51

·36

·55

32 My habit of putting off work leaves me wth far
too much to do at the end of the year (Dis)

34 Distractions make it difficult for me to
do much effective work in the evenings (Dis)

·50

·49

·60

39 I'm rather slow at starting work in the
evenings (Dis)

29 I find it difficult to organise my study
time effectively (Dis)

·38

Key
S Ap Strategic approach (ASI)   Dis Disorganised approach (ASI)
NA   Negative attitudes (ASI)

Figure 3.7 Nearest neighbours analysis – reproducing/involvement

36 A poor first answer make me panic (FF)

·45

34 My main reason for wanting to go to University is that it will help me to get a better job (EM)

37 When I'm reading I try to memorise important facts which may come in useful later (S)

·57

·46

·77

·46

32 The teachers seem to delight in making the simple truth unnecessarily complicated (SB)

29 I have chosen my course at University mainly to give me a chance of a really good job afterwards (EM)

·41

·55

35 I prefer courses to be clearly structured and highly organised (SB)

·53

·45

4 When I am presented with a new problem I spend some time thinking about how I am going to tackle it (S Aw)

·46

22 At university I intend to become really involved in the topics that interest me (I e)

·54

1 When I am studying I set myself targets (e.g. to read so many pages, to finish the chapter) and keep going until I get there (CL)

·51

·63

19 If I don't do as well as I'd hoped I often blame myself for not trying hard enough (CL)

·39

11 I generally take for granted that what I hear from teachers or read in books is correct (CL)

38 I chose this course more from the way fits in with career plans than from my own interests (EM)

·59

·56

40 Often I find I have to read things without having a chance to really understand them (S)

31 The continual pressure of work – essays, projects, deadlines and competition – often makes me tense and depressed (FF)

·64

·56

41 I find I have to concentrate on memorising a good deal of what we have to learn (S)

33 I usually don't have time to think about the implications of what I have to read (S)

Key

I e Involve experiential
S   Surface Approach (ASI)
EM   Extrinsic motivation (ASI)
S Aw Strategic awareness

CL Concept of learning
FF Fear of failure (ASI)
SB Syllabus bound (ASI)

Changes of wording

Wording in the pilot questionnaire had also been changed slightly to suit a New Zealand sample of seventh formers. The word 'teachers' replaced 'lecturers' and tenses were changed to be consistent with an intention to go to university in the future.

As a result of discussion with students after the completion of the Pilot Questionnaire two further changes were made. *'When studying the subjects I like most I find I work very much harder'* was changed to *'When studying the subjects I like most I find I put more effort into them'. 'The courses I plan to do at University will really challenge me as a person'* became *'I hope the courses I plan to do at university will really stimulate me as a person'.* After discussion with the students it was felt that 'stimulate' better reflected the intended meaning of the question.

Measurement of general approaches to learning

Students commented that they found it hard to generalise as to how they usually went about study. Some had attempted to generalise as best they could and others qualified their responses referring to work they had just completed or were currently working on for a particular subject. Such comments reinforced the view that the questionnaire should serve as background data to be reinforced by open ended questions and interview material as it seemed a possiblity that ASI data could be open to inconsistencies of response.

MAIN STUDY

INTRODUCTION

Traditionally researchers intererested in learning and associated phenomena (e.g. motivation) adopted methods consistent with that used in the general field of psychology. Methods were largely experimental and conducted in controlled settings using materials bearing little relation to those used in the classroom (e.g. Hall et al., 1988). In the learning field,

experimenters sought to identify factors that would predict academic success and generalisations were made about learning activity in an attempt to establish general principles of learning and/or teaching (Child, 1985). Dissatisfaction with such research has been expressed for many years. Writers such as Cronbach (1957), Clifford (1973) and Shuell (1980) have expressed concern that educational research had been of little value to practitioners. Suggestions for improvement have been made, for example the aptitude-treatment interactions of Cronbach[2], (1957) and by Nuttall (Nuttall and Snook, 1973), who suggested that a three phase research approach, combining description, correlation and experimentation would produce results that had relevance in the classroom. Recent experimental research is commonly conducted in a natural setting (often the classroom itself) and addresses issues of educational concern (e.g. Clifford et al., 1988; Craske, 1988; Torgesen et al., 1988).

A compelling call for a redirection of the focus of educational research came from Parlett and Hamilton (1972) who pointed to the inadequacy of the traditional agricultural paradigm in use in natural and physical science research. They argued that educational researchers should move away from a concern with prediction and control, and develop research methods that would enable them to interpret and describe educational phenomena. One way to achieve this is an illuminative design. One 'throws light' on an area of activity by using a combination of methods, selected to best meet the requirements of the study. Such a multifaceted approach recognises the complexity (both in terms of differences between learners and the interaction with contextual factors) of any learning situation. It also accepts the central role learners assume in directing their own learning.

Ference Marton's second order or phenomenographical approach to research is directed at gaining an understanding of 'peoples ideas about the world (or their experience of it)'(Marton, 1981 p. 178) and is consistent

with the approach espoused by Parlett and Hamilton. In adopting the term phenomenography, Marton is both acknowledging a link with phenomenology and pointing to significant differences. Both are concerned with experience. However, whereas phenomenology views perception as creating the essence of reality (Colaizzi, 1973), phenomenography is concerned with the study of individual's perceptions of reality.

Marton's particular concern has been with students' experience of content, its context and awareness (Gibbs et al., 1982). Methods utilising strict experimental control and mathematical models of analysis are not (on their own) consistent with the second order perspective[3]. Marton (1981) argued that 'if we think instead of the content of learning in terms of what is in the students' minds rather than of what is in the text book, it clearly seems preferable that the content of learning should be described from a second-order perspective' (p. 182). Marton's own work[4] has been qualitative although other researchers in the area have combined qualitative methodology with quantitative forms of analysis (e.g. Watkins, 1982a; 1983a; Entwistle and Ramsden, 1983). One feature that does characterise this research is the extensive use of interviews (e.g. Marton and Saljo, 1976a; Ramsden, 1984; Watkins, 1984; , van Rossum et al, 1985).

Earlier researchers have also been interested in students' perceptions of learning. For example, Perry (1970) and Becker et al. (1968) adopted qualitative methods and took account of student perception in their research designs, although in each case the questions were broad and covered a range of personal as well as intellectual experience.

A change in focus does not mean a reduction in rigour. In fact the analysis undertaken by Marton and his colleagues was both demanding of time and thorough in its examination of the data. This rigorous analysis involved comparison of interview transcripts to identify categories that each reflected a certain core meaning[5]. Attention was paid to both the comment itself and its relation to its context. Ultimately a number of

homogenous, hierarchically related categories emerged from the data. Similar analysis has been used by Ramsden (Entwistle and Ramsden, 1983).

Recognition of the importance of what a student learns in addition to how much can be recalled is widely accepted as a central focus of an increasing body of learning research (e.g Collis and Biggs, 1979; Gibbs et al., 1982; Entwistle and Ramsden, 1983; Biggs and Telfer, 1987)[6].

Marton and Svensson (1979) expressed concern about what are seen as valid results. The quantitative researcher assumes the nature of a particular concept is already known and the results will be concerned with how much of it may be found in any individual. Marton and Svensson argued that categories of description can exist in their own right. This view is based on the belief that by gaining an understanding of the 'way students conceptualised the world around them' (p. 476) we will better understand how students learn. A major focus of my own study is to identify the nature of involvement and to do so in terms of wider learning experiences. Such an outcome will not be achieved by testing experimental hypotheses but by building up a picture of various conceptions of involvement and relating these to learning experience and perceptions of context.

Despite the identification of quantitative methods with the first order perspective and qualitative data with the second order perspective this distinction is misleading. Quantitative methods have been successfully combined within the second order perspective (e.g. Watkins, 1983a) to produce a picture of general patterns of learning and more specific contextual influences. However, Marton and Svensson (1979) pointed out that factorial analysis of questionnaries may lead to generalisation about individuals regardless of other information from that person. With this point in mind the main function of the ASI in the present study was to provide descriptive data of the students that could be used to subdivide groups for further indepth qualitative investigation through interview.

Numerical data from the inventory was also useful in an investigation of the relationship between study orientation and involvement.

The following sections of this chapter describe the student sample and provide details of aspects of design used in this study.

STUDENT SAMPLE

Seventh form students

To ensure that the university sample was as large as possible it was necessary to select students who would be likely to move on to study at Victoria University of Wellington (VUW). With this in mind the first sample comprised students who had almost completed their seventh form year in Wellington schools.

Because of limited time and resources, schools with seventh form classes of at least 40 students were selected. Of the eleven schools approached, nine principals gave permission for their schools to participate. Two of these schools were used for the pilot study and the other seven included in the main study. The schools represented a wide geographical distribution within the Wellington urban area and suburbs and reflected a range of school types (Table 3.2). All seventh form students at school on the day of the research were used in the study. The one exception being a single-sex school where a number of pupils were competing in a cross country run - these students completed the questionnaire the following day. All questionnaires were completed in school time and students were given as much time as they needed to finish the questions. The researcher was available to answer any queries.

Table 3.2 Description of seventh form sample

Type of school
single sex - Boys   2 schools
            Girls 3   (1 of these was a private school)
Co-ed   -   2

Gender

	Seventh form students completed Q1		VUW students completed Q2 (YR1)	
	n	%	n	%
Female	108	47.2	40	51.3
Male	122	52.8	38	48.7

Students planning to attend university in 1983

	n	%
Yes	172	74.7
No	34	14.8
Unsure	24	10.4

Of these 230 students, 116 enrolled at Victoria University in 1983. Students enrolled for intermediate studies (e.g. engineering) were omitted from the sample as they were expected to leave VUW at the end of 1983 to complete their professional studies elsewhere. A total of 106 students were followed over the next two years. Seventy eight students returned the second questionnaire (Q2)[7] - a 73.5% response rate.

Second year university students

The sample comprised all students enrolled at VUW who had completed a seventh form year during 1981 at one of the seven schools mentioned above (n=107). Sixty six of these students completed the shortened form of the Approach to Study Inventory (Q2) and were therefore included in the main study (46.1% were female - a slightly smaller percentage than included in the first year sample). The pattern of study for the two groups is shown in table 3.3.

Table 3.3 Pattern of study

	Students	
	First year	Second year
1982	7th Form	Year 1 VUW
1983	Year 1 VUW	Year 2 VUW
1984	Year 2 VUW	Year 3 VUW

DESIGN

The study contained five components. The first of these was the Pilot study, the details of which have been outlined above. The remaining elements are discussed below and are as follows: a longitudinal approach, methods of data collection and instrumentation; the structural and interacting variables included in the study and methods of analysis.

Longitudinal approach

Research by Perry (1970; 1981) is widely referred to as an example of longitudinal research in the area of intellectual development (e.g. Wilson, 1981). However as mentioned above, his focus was broad and not directly relevant to changes in the learning approaches of students. Indeed Watkins and Hattie (1983) referred to the lack of longitudinal research on students' intellectual development. This is particularly marked in research relating to approach to study. One objective of this study was to examine changes in students perceptions of involvement and particularly the factors that encourage or limit student involvement. Time constraints did not permit the study to continue through an individual's three and in some cases four years of undergraduate study. To allow maximum coverage of students at the various points of transition, two samples of students were used whose study at university overlapped (see Table 3.3).

The first sample consisted of students who had nearly completed their final secondary school year. Information on expectations and goals was gathered before entry to university but at a stage when most of the seventh form students would have considered university as an option and

formed particular views about it as an institution for further study[8]. During the course of the study the first group of students progressed from seventh form to first year and into a second year of university study (Table 3.3).

The second sample was picked up during their second year and followed to the end of their third and in most cases final year of study (see Table 3.4 for the timeline of the study). This latter group was obviously also able to look retrospectively back to their initial experience of university. In addition such a sample gave extensive coverage of the second year of study as well as including students who were in their final year. The groups completing Q2 did not differ significantly on either school performance (sixth form certificate and bursary mark) or academic achievement at university.

Table 3.4 Timeline

Date		
1982		
October	Pilot study	Seventh form
	Questionnaire 1	Seventh form
1983		
June	Questionnaire 2	Year 1 students
		(7th formers enrolled at VUW)
	Questionnaire 2	Year 2 students
		(7th formers in 1981)
Aug-Sept	Interview 1	All students
1984		
July-Sept.	Interview 2	All students
December	Final course grades	All students

Data collection and instrumentation

Data was collected from several sources (Table 3.5) and using a number of different techniques (refer to Table 3.6).

1. Questionnaires (Q1 and Q2)

Both questionnaires (see Appendix B) contained three sections, background information, an inventory designed to measure orientation to study and open ended questions.

Table 3.5 Data Sources – First (1) and Second year (2) students

| | Q1 | | Q2 | Interview | | | |
	ASI	Open	ASI	Open	1	2	Grades[9]
Learning approach	1		1/2		1/2	1/2	
Educational orientation		1		1/2	1/2	1/2	
Involvement definition		1	2	1/2			
Involvement reasons				1/2	1/2	1/2	
Involvement benefits				1/2	1/2	1/2	1/2
Academic performance							1/2

a. Approach to Study Inventory (Q1)

Following the Pilot Study, the ASI was included to gather descriptive data that could be expected to bear a relation to students' quality of learning, and educational orientation. The inventory had already been extensively developed and tested (Entwistle and Ramsden, 1983) and was seen as a useful way of describing and categorising students, particularly as the study orientations described by Entwistle and Ramsden appear to have direct relevance to the quality of learning.

The Approach to Study Inventory used in Q1 was almost identical to the one used by Ramsden and Entwistle (1981). As a result of the Pilot Study several extra questions were included as well as a section designed to measure attitudes to involvement (Appendix B). Wording was altered

where necessary to make it appropriate for a New Zealand seventh form population.

Entwistle and Ramsden (1983) included four items in each subscale in later versions of ASI. Item selection was done on the basis of the highest correlations with the subscale total. Their calculations yielded satisfactory levels of internal consistency (Cronbach alpha) on three of the four domains (meaning orientation 16 items α =0.79; reproducing 16 items α=0.73; achieving orientation 16 items α =0.70). The fourth domain (i.e. styles and pathologies) was not expected to represent a single domain thus explaining the lower internal consistency reliability coefficient (16 items α=0.5).

b. Short form inventory

Q2 (Appendix B) was designed as a short form of Q1. A short form was used largely to ensure maximum return from students in the study. Q1 had been completed under controlled conditions but as the university students were being asked to complete Q2 in their own time competing workload demands meant that a questionnaire as long as Q1 would not have been returned by many students and would certainly increase the chance of a biased sample towards highly motivated and well organised individuals. Short form dimensions included deep and surface approaches, involvement, achievment and extrinsic motivation. These were dimensions thought to be significant in terms of distinguishing different groups of students. To ensure maximum validity, Q2 comprised questions that correlated most highly with the total dimension scores in Q1 (Appendix C). To reiterate the point made above, results from both Q1 and Q2 were intended as descriptive devices.

c. Open ended questions

The open ended questions in Q1 and Q2 enabled the students to include information that they considered relevant to their own experience. Questions covered reasons for university study, personal definitions of

involvement, reasons for or lack of involvement and the perceived benefits of involvement. It was important not to limit students' responses by the use of 'tick the box' format. As it happened a number of responses were extremely detailed and included a range of issues. Detail of the analysis is given below.

Students who were slow at returning Q2 were all followed up with one phone call.

2. Interviews

Interviews were conducted in a semi-structured way, organised around a set of key topics developed from the aims of the research. These were as follows:

a. to identify student perceptions of involvement.

b. establish whether a relationship existed between involvement and approach to learning and educational orientation.

c. to determine the influence of involvement on the quality and quantity of learning.

d. to identify personal and contextual factors that are influential in the development and maintenance of involvement.

e. to examine the implications of the results for teaching practice and course design. (see Chapter 8 for details).

This interview approach allowed sufficient scope for development of topics mentioned by students as significant in terms of their own experience. The interviews themselves centred around activities such as lectures, tutorials and assignments which would have meaning to all those involved. Responses were then further probed to examine the nature of attitudes to learning and learning processes.

Selection for interview was done on the basis of orientation to study score (ASI or Q2) and involvement comments. School leavers and second year students were chosen randomly from the groups described below. A

high score was taken to be those more than one standard deviation above the mean.

School leavers
1. 10 students with high meaning orientation score (ASI)
2. 10 students with high reproducing orientation score (ASI)
3. 5 students indicating involvement in study (open ended questions and involvement dimension score)
4. 5 students indicating non-involvement (open ended questions and involvement dimension score)

Second year students
1. 10 students with high deep approach score (Q2)*
2. 10 students with high surface approach score (Q2)
3. 5 students indicating involvement in study (open ended questions and involvement dimension score)
4. 5 students indicating non-involvement (open ended questions and involvement dimension score)

*NB: Of this group 8 students completed the first interview. The total interview sample was 58 students

The interviews took place in the second semester of the year. For the first interview this gave time for the results of Q2 to be analysed and utilised in the selection of students. More importantly, the first year students would have either completed a first semester course or be well into a full-year subject. Second year students would have experienced some months of 200 level study and would therefore have formed a basis for comparison with first year courses. They would also be aware of course demands and have some idea of their own academic progress.

The follow-up interview (Interview 2) took place at the same time of the year for similar reasons, namely the development of experience. Other influences like winter weather, assignment loadings, time to final exams would be roughly comparable between the first and second interview.

a. Interview 1

The primary purpose of the first interview was to talk to students about their experience of university, including academic progress, lectures, tutorials and assessment, adjustments they had made, perceptions of the concept 'understanding' and a follow-up to their earlier comments given in the questionnaires on involvement in study. Questions probed student perception of the role of staff and the demands made in terms of assessment, workload and the students response to these in terms of their effect on involvement (Appendix D).

b. Interview 2

In most cases the second interview was slightly shorter than the first and involved a discussion of progress since interview one. Students were asked about the changes they had made and noticed in courses of differing levels, what they had gained from being at university, moves to independence and its encouragement by staff, description of their 'ideal course', as well as future plans. The main focus of the second meeting was on changes experienced and the reasons for these changes and a development of student response to different courses (Appendix D).

3. Academic performance

Senior school and university academic performance data was also collected. This information served three purposes. The first was to gain an indication of a student's academic ability, secondly to verify the university performance information given by students in the interviews. The third purpose was to determine whether a relation existed between academic performance and approach to learning and involvement.

Sixth form certificate grade and total bursary mark were recorded for each of the students entering direct from school. The records were obtained from the liaison officer of VUW who routinely checked them for accuracy. The University academic records for the first year group covered

performance for 1983 and 1984 with 1982 included for the second year students.

Academic performance was described in terms of Grade Index based on grades obtained. At VUW three possible grades can be allocated above a basic 'C' pass level: A (75% and above) B1 (68%-74%) and B2 (60%-67%). For the purposes of calculating the grade index these were worth 4, 3 and 2 respectively. A 'C' pass or its equivalents (e.g aegrotat pass) was worth 1. Unless the student had withdrawn from a course with permission (in which case it was not included in the calculation of grade index), all other outcomes were scored 0.

$$\text{Grade Index (GI)} = \frac{\Sigma \text{ grade score}}{\text{Number of courses}}$$

A total GI was calculated as well as GI's from each year's results.

Variables

The research was based around three variables (i.e. involvement, approach to learning and educational orientation). These formed the framework of the study. The shading and colour came from student perception of their learning experiences. This included the value of university in both short and long term, the course and general university climate[10,] as well as the changes individual students made in response to perceived course demands and individual goals.

1. Involvement

Investigation of the nature of involvement in the students own terms formed the basis for examination of the role involvement played in the quality of learning. The study focused on

    a. student definitions of involvement.

    b. reasons for becoming involved or not.

c. the benefits students perceived that they had gained from

  involvement.

Information on these issues came from open ended questions and interview

data.

2. Approach to learning

This variable measured students' usual way of tackling their study and attitudes to academic work. The data was collected using the ASI with additional probes in the interviews. Students were described individually using dimension scores from the inventory. In addition data from the total sample was factor analysed to examine the pattern of factors emerging from this particular sample.

3. Educational orientation

This variable was based largely on the work done by Taylor et al. (1980) and described students' reasons for enrolling at university. Information was gathered from open ended questions in both Q1 and Q2.

Methods of analysis

The following section gives details of the methods of analysis that were used on each element of the design. The combination of methods is presented in Table 3.6.

Table 3.6 Triangulation methods of analysis

	Factor analysis	Regression	Grid	Interview
Learning Approach	√	√		√
Educ. Orientation			√	√
Involvement	√	√	√	√
Academic performance		√		

1. Approach to study inventory

a. Factor analysis

i Seventh form students

The data from the ASI was subjected to principal components analysis (Tabachnick and Fidell, 1983). The factors were rotated to obtain a meaningful interpretation of the data and consideration was given to whether the rotation should be orthogonal or oblique. In the first instance, varimax is appropriate because it maximises the variance of the loadings for each factor, whereas oblique rotation (e.g. promax) takes account of clusterings of variables where clusters themselves are correlated. One way of deciding whether to use an orthogonal or oblique procedure is to inspect a graphical representation of the unrotated loadings (presented in Appendix E). The results have suggested that clustering of variables is sufficient for orthogonal rotation. However as a matter of interest a promax rotation was also done, producing virtually the same interpretation of factors (see Appendix F). Therefore, the ASI was subjected to principal components analysis under varimax rotation. Five factors had eigen values greater than 1.0, accounting for 59.8% of the variance. In addition, Cattell's scree test was performed to determine 'the percent of variance accounted for by each of the factors in the solution' (Tabachnick and Fidell, 1983 p. 408)(see Appendix G for respective scree plots). Examination of alternative solutions indicated that five factors did indeed best reflect the data.

As research interest focused on the relationship between involvement and approach to learning as measured by the ASI, the dimension 'involvement' was included in a further principal components analysis[11]. As with the previous analysis, five factors obtained eigen values greater that 1.0 accounting for 58.23% of the variance.

ii Students intending to enrol at university

To determine if differences existed in the pattern of response between the total seventh form sample and those intending to study at university, analysis was conducted on the inventories completed by students who indicated that they were definitely enrolling at university the following year. Using principal component analysis using varimax rotation, four factors had eigen values greater than 1.0.

b. Multiple regression

Multiple regression was conducted to determine whether grade index could be predicted by either school performance variables (bursary mark or sixth form certificate grade) or the Q2 dimensions of the ASI. This technique was seen as useful as it allowed the assessment of 'the relationship between one dependent variable (in this case grade index) and several independent variables' (i.e. bursary mark, sixth form certificate, and scores on the dimensions of involvement, deep approach, surface appraoch, extrinsic and achievement motivation) (Tabachnick and Fidell, 1983 p. 87). Separate analyses were conducted for first and second year students using the maximum R- square improvement method (SAS, 1982)

2. Open ended questions

In answer to the open ended questions, students frequently gave responses that touched on a range of different issues. As the points raised were not necessarily distinguished in terms of importance it was important to develop a system of coding that recorded the detail of each answer. For example, one student's reason for wishing to attend university (educational orientation) fell into five separate categories.

' - meet people, didn't want to join the workforce just yet (or dole queue or whatever the case may be), hopes of a better job, mum and dad would kill me if I didn't (well not quite that dramatic but the idea wouldn't thrill them), a chance to better myself intellectually'.

Another example illustrates an educational orientation response by a student whose comments were coded in three of the academic category subsets as well as the vocational category.

`  - to further my education` (academic), `get a degree (BCA)` (vocational), `obtain practical experience in computing` (academic), `to follow any subjects that interests me`'(academic).

With this requirement in mind the researcher developed a coding grid for each question (see Appendix H). Answers were coded at two levels.

a. The general category used by the students in their answers.

b. The detailed points were placed in a relevant subset of each main category.

This method of coding made it possible to record a response that covered several categories and a range of subsets within the categories.

The first step in category development involved reading all the responses given to a particular question. This gave an overview of the issues raised. In the case of the questions dealing with educational orientation and the definition of involvement, previous research suggested possible categories (Taylor et al., 1980 and Adams, 1979 respectively). While the work of Taylor (Taylor et al., 1980) and Adams (1979) provided a useful starting point for the analysis of these two questions, the data itself determined the categories and subsets that were used in the final form of the grid. The coding of the responses dealing with reasons for, or lack of involvement and benefits of involvement derived completely from the data.

To ensure reliability of coding the researcher worked with two judges. Each worked independently from a description of each category and subset (see Appendix I for details of coding instructions used by judges). Any coding problems were discussed when they arose. For example in the involvement definition question the subset 'participation' was added. Each judge completed a separate coding grid and these were later collated. Any

areas of disagreement that appeared at this point involved examination of the original response and discussion between the judges until agreement was reached.

Initially the data was analysed in two ways:

a. A calculation of the percentage of students giving responses in any one category.

b. The emphasis students placed on the various subsets was simply calculated by giving the percentage of students in any subset in relation to the total number of responses in that category as illustrated in the following example. Sixty one first year students indicated vocational orientation in their answer (vocational + in Table 5.13). Ten of these students referred to a specific career. Each response was therefore coded in the subset 'specific career' within the vocational category. When this is presented as a percentage it is clear that 16.4% of vocationally oriented first year students have a specific career in mind.

To give an indication of the reliability of such data an estimate of error was calculated for each group of students. Calculations were based on the following formula:

$$Sp = 100 \times \sqrt{PQ/n}$$

This formula (Fergusson, 1981) gives the 68% confidence interval for a split of students into two categories, namely the proportion who gave a particular response (P) and the proportion who did not (Q). Rather than calculate the figure separately for each entry in each table of results – the data does not require this degree of precision – a global value based on P=0.5 and Q=0.5, was calculated for each group of students as a whole. The obtained figure provides a 'maximum' or 'upper band' of error for the individual entries.

Details of the analysis for each question is presented in the following chapters.

3. Interviews

Analysis of the interview transcripts was conducted with two basic principles in mind. The first reflected the aims of the study and the second was based on the belief that students should be able to speak for themselves (second order perspective). As far as possible analysis was designed to avoid comments being categorised using predetermined researcher originated coding. Rather, the wording of the questions was intended to probe student perception. It was felt that techniques of analysis such as the networks used by Bliss (Bliss et al., 1983) were unnecessarily abstract and structured and would mask the students' explanations of their own experiences.

Analysis was a lengthy process involving numerous re-reading of each typed transcript by the researcher and two judges[12]. Key statements relating to students perception of learning and their experiences of study were marked. The judges recorded student references to the use of deep and/or surface approaches and perceptions of involvement (see Appendix I for judges coding instructions). Organisation of these key statements took place on three levels.

a. Responses given to particular topics (e.g. tutorials, involvement, understanding). Most students had responded in some way to the questions that formed the basic framework of the interviews.

b. The second level of analysis was more thematic. Comments were examined in terms of their relationship to common themes that emerged from the data itself (e.g. the importance of approach in determining involvement and an apparent distinction between personal and vocational relevance). While a theme represented a generalised perception of various aspects of study it was not necessary that students agreed with one another. The structure of the interview schedule meant that some topics were raised with all students. Other issues were raised by the students themselves at various points during the interview which suggested some

perceptions and attitudes were characteristic of one group of students (e.g. passivity to study of students who typically adopted a surface approach). Certain aspects of university life are important to most students (regardless of approach to study) in terms of shaping their involvement (e.g a positive attitude of staff). The themes were seen to reflect these concerns.

c. Responses relating to change over time. Comparisons between comments made in the first and second interview were relevant here as were those comments specifically addressed to change (e.g. move to independence). At this point it was particularly important to obtain an overview for each individual in terms of the comments made in the first and second interviews. To achieve this objective, a summary of key points made in both interviews was prepared.

Each of the following chapters presents an integration of questionnaire and interview results as they relate to one of the five aims of the study.

NOTES

1. In this perspective learning is not a subject for reflection, rather it is 'essentially reproductive memory activity where the task of the learner is perceived as that of getting all the facts into your head (Saljo, 1978 p. 5).

2. More recently Cronbach (1975) has suggested that the interactions are more complex than earlier suggested. Although proud of being part of a scientific tradition, he questioned the value of a search for generalisations. Cronbach commented that 'the goal of our work (as psychologists)... is not to amass generalisations atop which a theoretical tower can someday be erected. The special task of the social scientist in each generation is to pin down the contemporary facts. Beyond that, he shares with the humanistic scholar and the artist in the effort to gain insight into contemporary relationships, and to realign the cultures view of (people) with present realities' (p. 126).

3. Marton and Svensson (1981) made the point that the first and second research perspective are complementary. However each has different concerns and therefore different research methods.

4. Marton's first order perspective is based on the researcher's view of the world and a desire to predict learning related behaviour. Examples of such research include searches for factors related to student success (e.g. Wankowski and Cox, 1973) or dropout (Astin, 1975).

5. A key feature of Marton's method is that categories emerged from the data and were not predetermined by the researcher. Student responses were 'grouped into a number of categories, according to the basic underlying structure expressed' (Dahlgren, 1984 p. 25). The process of analysis involves examination of student comments in order to identify the underlying meaning of statements made 'irrespective of what words or examples they may use' (p. 26). Marton and Saljo (1984) describe the process in very concrete terms. 'Sorting the quotes into piles, trying to extract a core meaning common to all the quotes in a certain pile, examining the borderline cases and eventually making explicit the criterial attributes defining each group not the least in contrast to the other groups' (p. 55).

6. The importance of quality of learning is not universally acknowledged as of greater importance than the quantity of learning. For example Kiewra et al. (1988) measured the effectiveness of note taking structures on test performance scores.
With increasing emphasis on accountablity based on student achievement the pendulum may swing back to a predominant concern with how much students learn (Nuttall, 1988). Forms of assessment need to be used that can given an accurate indication of student understanding in addition to mastery of content.

7. Q2 comprised open ended questions and a short form of the Approach to Study Inventory. See page 135 for details.

8. The University Liaison Officer had visited each school earlier in the year to discuss university study as an option for students.

9. As used here 'grades' includes measures of school performance (bursary marks and sixth form certificate grade) as well as grades obtained at university.

10. Refer to Chapter 2 p. 112 (note 9) for a discussion of the distinction between course and general university climate

11. Involvement showed a similar pattern of loading when included in analysis using students intending to enrol at university.

12. The analysis conducted here is at least as rigorous as that carried out by workers in the field (e.g. Watkins, 1983a; van Rossum and Schenk, 1984) who typically use one additional judge.

CHAPTER 4

THE NATURE OF INVOLVEMENT

The following four chapters present an examination of results and discussion relating to the aims of the study. This chapter sets out to clarify the nature of involvement as perceived by students. (aim 1 p.111). Material is included from the open ended question 'What does being involved in a course mean to you?' and both interviews.

OPEN ENDED QUESTIONS
CATEGORY ANALYSIS

Students were asked 'What does being involved in a course mean to you?' The focus of interest was directed specifically at involvement in study rather than university life as a whole.

Two groups of data are presented here. They are:

1. seventh form students who indicated they definitely intended to enrol at university the following year.

2. second year students at VUW who completed Q2.

Three categories of response were identified: 'experiential', 'activity' and 'outcome'. These are discussed in detail below.

During the preliminary reading of the responses, the categories suggested by Adams (1979) were considered for use in the coding grid. Adams distinguished between 'actions and feelings or interest' (p. 509) Preliminary examination of student responses indicated that students did indeed distinguish between feelings, such as interest or enjoyment and involvement activities such as reading or attending lectures. However, detailed examination of the affective comments indicated that some students referred to feelings that *led to* involvement and affective

responses that *resulted from* involvement. After discussion between the judges and further reflection, these affective responses were combined to form the category 'Experiential'. The data as presented made it too unreliable to attempt such fine distinctions. Some students made a clear distinction between feelings that *led to* involvement or were the *result of* being involved but many combined the two – commenting on an affective response that was part of their total involvement experience. More precise measurement is needed to make an accurate analysis of this aspect of involvement.

In Chapter 2 it was argued that Adams' experiential category was extremely broad. As defined here 'Experiential' includes definitions of involvement that described affective responses such as enjoyment, feelings of interest or a desire to learn. The term 'experiential' avoids the psychological connotations of a term such as attitude. A response that referred in any way to a learning activity (i.e. doing something) was coded as a subset of Activity. Thus definitions that referred to interaction were coded in the interaction subset of Activity since it was seen as one example of a range of activities students engaged in when involved rather than representing a category on its own (Adams, 1979). Self-direction in learning was coded as Activity as was any reference to various coping strategies. The most significant departure from Adams' work was a clear emphasis on involvement as an outcome. It was clear that students sometimes perceived involvement in terms of its results (either in terms of better marks or improved understanding); Outcome thus comprised the third category.

Involvement categories

The following section describes the categories and subsets in detail. Quotes are used to clarify the differences between subsets that may appear similar.

Table 4.1 Categories and subsets of involvement definition

Category	Subset
Experiential[1]	
Activity	deep processing interaction participation academic work
Outcome	deep quantitative

1. Experiential.

This broad category was used to record definitions that related involvement to experiences or feelings associated with study. It included comments that related involvement to enjoyment, interest, intellectual stimulation and satisfaction. Responses that talked about *wanting* to understand or work independently or *feeling* a sense of dedication were all coded as experiential. The experiential category as defined here most closely resembles Goffman's description of involvement (Goffman, 1957) in that the student is emotionally as well as intellectually committed to what they are doing.

2. Involvement activities.

This category included all those definitions that referred a range of learning and study activities and reflects Astin's (1984) concept of academic involvement.

a. Deep processing. The student clearly indicated that some form of deep processing (Marton and Saljo, 1976a) was associated with involvement activity. Examples included thinking, active listening, or relating ideas. A clear distinction was made when coding responses that referred to processing and those that talked about a deep level of outcome (coded as deep outcome)

The following three quotes illustrate involvement as (1) deep processing activity, (2) a combination of deep processing activity and outcome and (3) deep outcome.

1. *'...trying to make critical appraisal of the work'.*

2. *'Usually involves a lot of time thinking about the topic from different angles so that I can explain the topic to myself rather than just know "it looks something like this and you plug in this formula".*

3. *'...to understand and notice significance of information given'.*

b. Interaction. This subset included all those definitions that clearly stressed interaction between individuals (staff and/or students). Examples included discussion, contributing and joining in.

c. Participation. This subset was added during final coding. The judges felt that some students were giving the response 'participation' without making it clear whether they meant discussion with others or doing the course work. An additional subset was created which included all comments that referred to participation or active participation without further elaboration. In the opinion of the judges this response was given automatically by some seventh form students. The judges felt that little consideration have been given to the implications or meaning of active participation.

d. Academic work. Students frequently referred to a range of study activities. Adams (1979) included these in her 'accountable performance' category. However, Adams' subsets, while distinguishing between activities such as reading and writing did not separate students who saw involvement in terms of doing the required work from those who did more than required. While both definitions describe involvement in quantitative terms (i.e. doing a certain amount of work) it seemed more important to include this

distinction in the analysis than to refer specifically to a range of study activities.

i.   basic activities. Responses covered attending lectures, assignment preparation and spending time on study. In this case involvement was perceived as carrying out the basic requirements in a conscientious way (e.g. going to tutorials regularly).

ii. doing more than required. To be coded thus the student must specifically state that if involved they would put in *more* time and/or effort than required just to pass the course.

3. Outcome.

It was clear from the definitions given that a number of students defined involvement in terms of its outcome - in other words, as the result of being involved in a course.

a. Deep level. Students made it clear that their learning was at a deep level. Examples included gaining understanding and applying ideas.

b. Quantitative. An outcome perceived in terms of the grades obtained or increases in the *amount* of information retained.

RESULTS

Three points emerged from the analysis. Firstly, students perceived involvement as a combination of three elements (categories): involvement as experience, activity and outcome. Secondly, these three categories were all used by first and second year students, although relative emphases differed (see Table 4.2). Thirdly students' definitions frequently reflected an interaction between categories.

Table 4.2 presents the definitions given by seventh form students (Q1), and second year university students (Q2) in the following forms:

1. The percentage of students who gave responses in the various categories or combinations thereof.

2. Percentages of students who included one of the three categories in their response (either alone or in combination).

Details of subset information are given in Table 4.3.

Table 4.2 Definitions of involvement – Categories

	7th Form		YR2	
	n	%	n	%
Experiential	36	18.9	5	8.2
Activity	61	32.1	21	34.4
Outcome	20	10.5	1	1.6
Experiential/Activity	34	17.9	21	34.4
Experiential/Outcome	15	7.9	2	3.3
Activity/Outcome	15	7.9	7	11.5
Experiential/Activity/ Outcome	9	4.7	4	6.5
TOTAL	190		61	
Max error %		3.6		6.4
Experiential+ [2]	94	49.5	32	52.5
Activity+	119	62.6	53	86.9
Outcome+	59	31.0	14	23.0
More than 1 category	73	38.4	34	55.7

Table 4.3 Definitions of involvement – Subsets (calculated on total number in category) [3]

	n	%	n	%
Experiential	94	49.5*	32	52.5*
Activity				
Deep	11	9.2	8	15.1
Interaction	24	18.5	19	35.8
Participation	29	22.3	1	1.9
Basic	72	55.4	19	35.8
More than required	23	17.7	32	60.3
Outcome				
Deep	13	20.3	8	57.1
Quantitative	48	78.7	6	42.9

*Calculated as % of total sample

When one examines the overall pattern of results in Table 4.2, one can see that almost one third of the students in this study defined involvement solely in terms of activity with a particularly high percentage of second

year students (34.4%) doing so. Clearly involvement is viewed in terms of observable behaviour by a significant number of students, a finding that is consistent with Astin's (1984) perception of involvement. In other words how one spends one's time is an important element in involvement as argued by Miller (1977). The current study makes the important distinction between basic requirements and involvement as undertaking additional study (Table 4.3). It is interesting to note that over half the seventh formers whose responses fell into the 'activity' category, perceived involvement in terms of performing basic course work and/or regular attendance (35.8% for second year students). Students who linked involvement and basic activities generally referred to personal diligence. For example a student may attend all the lectures and tutorials and complete background reading in a course where they were involved, while in a 'non involved' course even these basic activities[4] would not be completed. The second year students (60.3%) focused more specifically on engaging in more work than required. Most of these individuals perceived this extra input in quantitative terms (e.g. extra reading).

Second year students placed more emphasis on involvement as interaction than did their seventh form counterparts. More detailed analysis of the data suggests that interaction refers principally to discussion within the course, a finding that is not consistent with Terenzini's (Terenzini et al., 1982) emphasis on social out-of-class interaction. However, the focus of the present study is more specifically on involvement in study which may explain the difference in emphasis.

The findings outlined above are consistent with Astin (1984) who emphasised involvement as behaviour. However, unlike Astin, the students in this study placed considerable stress on the experiential aspect of involvement. In fact half of them made such a reference.

As discussed in the previous chapter there is some confusion as to the role of experience which may (in some cases) more properly be a reason for, or outcome of involvement activity. However, the question asked students to state what involvement meant to them and the inclusion of experience in the response suggests that affective experience is an integral part of students' perception of involvement. As Adams (1979) found, students do distinguish between feelings and behaviour when defining involvement but each forms an integral part of their definition.

An unexpected finding in this study was the perception of involvement as an outcome. The category was less significant than the other two, with students tending to combine it with either activity or experience. It is clear from the subset details (Table 4.3) that seventh form students perceived outcome largely in terms of quantity. Examples included better marks, or increases in amount retained. The greater emphasis given by seventh form students to quantitative outcome may be a function of their experience of school based learning and the fact that the last three years of their schooling had been directed towards preparation for external examinations (School Certificate, University Entrance and Bursary/Scholarship). Second year students did place greater emphasis on deep level outcomes – a finding that is consistent with their comments on deep level activities (Marton and Saljo, 1976b). However numbers are small, making conclusions difficult to draw. One could argue that interaction[5] where students express their own ideas or interpretations, and develop a sense of personal meaning, also reflects a deep approach. This subset was also more frequently mentioned by second year students which indicates the importance of providing opportunities for discussion if students are to engage in involvement activity.

The differences in perceptions of involvement between seventh form students and those in their second year at university suggests that these

are the result of differing learning experiences. The relatively unstructured programme of university may provide opportunities for engaging in additional study, and the explicit role of tutorials as a vehicle for promoting discussion and interaction between students may be reflected in students' definitions of involvement.

INTERVIEWS

In the first interview, students were reminded of their questionnaire definition and asked if they wished to revise their earlier comments. In fact only six students[6] made substantial changes. Two (both with high scores on the deep approach) expanded their definition to include an experiential aspect and another two individuals removed experience. One student stated that enjoyment was not significant in her current perception of involvement, while another remarked that liking a course was not essential for involvement. However this student clearly indicated an emotional element in his actual experience of involvement in Psychology (*'I'm doing Social and Individual and parts of that I really love it....I really got into that it was really neat'*). A fifth student changed her earlier 'basic activity' definition to one that explicitly referred to the importance of doing extra work, and the sixth no longer felt that 'mixing with other students' was important.

After reading the complete transcripts it was clear that students who saw themselves as involved in one or more courses spoke in an animated and enthusiastic way about their studies. They spent longer discussing their learning experiences and described these in more detail than did non-involved students. The distinction is best illustrated by the following quotations from Sarah (an involved student) and Nigel 'who was not involved in any course'.

Sarah expanded her original definition of *'doing more than just the bare minimum to pass the course'* to one of,

'Really enjoying the course. I don't think I could become involved in something unless I did feel a lot for it...just getting as much out of it as possible, really pushing yourself to the limit to learn it and find out and enjoy'.

The example used to illustrate this sense of involvement was a modern poetry course she had completed in the first year. It had been suggested by Sarah's academic adviser and was not selected through personal choice.

'I hate poetry and I went in there thinking Ugh! and now I love it and I've bought thousands of books this year and spent lots of money. It was the only course where I think I have actually been to all the lectures and all the tuts for and it wasn't because I was scared I was going to fail, it was just that I loved it – really enjoyed it...I started keeping a scrap book of poems that I particularly liked, writing them down just parts and quotes and things like that so I've still got that and I still continue doing that'.

Nigel had originally given a 'basic' definition of involvement. *'Attending classes and tutorials and assignments etc'.* In practice *'I don't really get involved in courses or anything'.* The reason being that his priorities lay with the pursuit of outside interests.

LEVELS OF INVOLVEMENT

Students' description of involvement experiences suggested that a distinction between involved and non-involved individuals was too simplistic and a further level of involvement was identified (i.e. limited involvement). The comments made by Sarah and Nigel illustrate full involvement and non involvement respectively. The three levels are described in more detail below.

Limited involvement

Limited involvement in this context is taken to mean the bare minimum in terms of effort; patchy and inconsistent input with little or no

evidence of enthusiasm or personal commitment and thus reflects less involvement in terms of time and/or effort, and involvement of low quality as illustrated in the following examples:

For Grant, involvement was originally defined as 'participating actively in any course'. In the first interview he defined active participation in 'basic' terms *'preparing for tuts and then making an effort to participate in tutorials'.* Grant's limited involvement was reflected in his response to the question 'would you say you come into that category.' *'Yes just'.*

Gary experienced limited involvement in Economics.

'Its quite a long course and I've been in and out and with so many different topics I've enjoyed some more than others, some that I've taken in, some I haven't'.

Full involvement

Full involvement combined interests or feelings about the course, such as enthusiasm or enjoyment, a high level of input (e.g. time, effort or quality of activity), personal contact with staff or other students and/or participation in extra-curricular course related activities.

Ruth was fully involved in French. '*I am involved in the French club. I am secretary of it this year'.* One of her other classes at *'just over 100'* and therefore made social contact *'a wee bit harder...but I did do a lot of extra reading for that because some of the works were just so interesting'.*

Beth was very enthusiastic about the course and the lecturer whom she described as follows:

'He's the best, he is really wonderful because he makes his lectures really interesting because he is so obviously enthusiastic about the whole thing - he transfers that and he also gives you the opportunity to really research what you are interested in'.

No involvement

At this level the students indicated that they were not involved in a course as illustrated by Nigel (above).

As Table 4.4 shows, the majority of the interviewed students gave clear indications of full involvement in at least one course with very few not involved in any course. It must be noted that level of involvement does not reflect personal characteristics but rather a specific reaction to a course. The tendency to label students as 'fully involved' arises from a consideration of their general definitions of involvement. However, examination of the interview transcripts clearly showed that no student was fully involved in all courses. The experience of involvement was *course-specific* rather than generalised as the quotations from Sarah's interview indicate. Table 4.4 gives the number of students who reached particular levels of involvement in one or more courses, it does not give the number of 'fully involved' students. The eight non involved students were not involved in any course.

Table 4.4 Level of involvement (n=58)

	None	Limited	Full
No. of students	8	11	39

THEMES

Analysis of the interview transcripts revealed five themes that can be said to characterise student perception of involvement. They are as follows:

1. Involvement as experience, activity and outcome.

2. Involvement as a perception of course requirements.

3. Involvement as depth of approach.

4. Involvement as personal or academic.

5. Involvement in the subject matter.

These themes supported and extended the open ended results and are discussed below.

Because of the integrated nature of the comments made by students, the themes were often embedded within one remark. To avoid loss of meaning this section begins with a series of illustrative quotations with brief comments as to relevant theme. Discussion of the five themes follows.

Emma agreed with her original definition of *'getting interested in the topic, understanding and enjoying it, doing research work purely for interest'.* She commented that she felt like this about Geog 204. *'Definitely really loved it, I can easily (be) very involved in that and the same with both the classics'.*

This is a definition that included activity (which may be classified as deep), outcome and strong experiential elements.

Stephen defined involvement as

'More than just going to the lectures and doing the assignments. It's finding the course really interesting and wanting to find out as much as possible about the aspects of it that interest you'.

Reference is made to doing more work than required (quantitative), the importance of interest and experiential involvement.

Jane had initially defined involvement in terms of class attendance. In the first interview her view was slightly different. The definition made an important distinction between involvement in the course and the subject. Psychology provided the example.

'I was quite enjoying the text but I wasn't going to lectures and I was even missing a couple of labs...so you are not really involved in the course but you are involved in the subject...I think I am really involved with Law I haven't missed a lecture. It's my most important subject...I do study every night and I study Law first to make sure I get that out of the way because it doesn't matter if I fail the others but it matters if I fail Law'.

For Jane involvement meant fulfilling the basic attendance requirements and completion of work set. It is interesting to note the distinction between a sense of involvement in the subject matter which is not demonstrated in the response to the course as an institutional entity. Jane found Law to be the most enjoyable course. The indication of fear of failure relates to Jane's failure of the mid course test and some anxiety over the Socratic method of questioning used in the lectures. These factors combined to make success in Law a challenge for Jane (in the event she did not pass and repeated the course the following year with improved results and even greater enjoyment).

Mahdur had initially included enjoyment in her definition of involvement along with learning and understanding. Four months into her degree, understanding was still important but not so enjoyment.

'I still believe that involvement means learning and understanding what you are doing, you can't just do your work like a parrot but when it comes to enjoying I find that some of them I don't enjoy but I still try to enjoy what is going on'.

For Mahdur the experiential aspect of involvement was less important as she now placed her emphasis on understanding as an important outcome of involvement.

Celia defined involvement as *'having an active interest in the subject, enquiring about it, working for it as hard as you can and trying to get as much enjoyment out of it'.*

Celia combined aspects of a deep and surface approach in addition to experiential characteristics.

Sally found that involvement resulted in

'much more creative essays if I'm interested in it otherwise it's the topic I'm going to talk on today and then you get a conclusion and that's just repeating the introduction and saying and so I have proved that'.

This provides a clear statement of a deep level outcome.

Ben had given a 'basic' definition of involvement in his Q1 response.

'Going to tutorials, lectures, handing in essays in but also pursuing the subject that you are interested in in the manner you want to'. In interview one handing in essays was not 'terribly important'. Involvement now meant

'going to lectures and concentrating...If I really concentrate on what he's saying then my notes are so much better and my understanding so much better...doing essays before the lectures rather than afterwards...tutorials putting your effort into that'.

This quote is significant in that a basic definition is given but it also suggests that Ben seeks understanding. Ben's comment suggests that students may demonstrate a deep approach in combination with a description of involvement as engaging in basic activities. This distinction is discussed in more detail below (p. 169).

Rachael amplified her original definition.

'I still think to me it means having more of a personal contact with the department or the people in the department and also I think you can get a lot more involved in anything if you have a choice rather than... forced to do something'.

Reference is made to personal contact and the importance of independent choice[7].

Julia used the term 'full' involvement to describe her response to English.

'my attitude to English is quite positive and so my involvement in English I think is fairly full. I do participate and discuss and so on'. For the other courses *'I don't really go through the books that I'm required to go through in an much detail as I should...I do for English though'.*

Julia gives a basic definition combining experiential and active aspects.

Max defined involvement as *'going beyond that basic learning techniques and exploring the course personally'.*

This is a definition that views involvement as going beyond basic requirements with personal input.

Beth mentioned doing course work in addition to *'feeling interested and satisfied with a course programme. Getting to know fellow students and tutors and stimulating further study'*.

Here reference is made to interaction on an academic and possibly social level.

The general atmosphere at the architecture school had encouraged Roger to become involved. This tied in with his original definition of involvement as

'participating in social and academic occurences within the course and within the group of people involved in that course. Feeling part of what's happening'.

His experience changed during the course of his second year at university (first year at architecture school).

'I didn't like to be involved at varsity much, I like to come in from Lower Hutt and do my work and go home and forget about it. That's what I thought I'd do this year but you've got to spend quite a bit of time up here. It gets to be quite fun after a while'.

A clear indication of social involvement with other students is given here.

Peter agreed with his earlier definition of *'getting at least B passes and also voluntary further reading'* and added that

' I would like to meet more of the lecturers casually...I would like to get to know some of them because (I) could follow up a topic or something somebody else was doing...if I've got something that really interests me then it seems like its all worthwhile'.

In addition to quantitative outcome and enaging in additional reading, interaction with academic staff outside class was an important element in Peter's involvement.

The following themes emerged from the interview after repeated reading and discussion. The themes should not be seen as independent, as each interacts with the other, however for the sake of clarity they are discussed separately.

Involvement as experience, activity and outcome.

Interview data supported the distinction made between the experiential, active and outcome related aspects of involvement.

Involvement as a positive feeling towards one's course or its subject matter was expressed by 31 students (53.4%), a similar emphasis to that given in the open ended results (Table 4.2). The natural extension of such positive feelings was to engage in a range of learning activities. These findings give further support to Adams' (1979) identification of feelings as an important element in students' perception of involvement.

A large number of students (n=39, 78% of involved students) talked about what they did when involved in terms of mental or physical activity. The qualitative differences between the various activities is discussed below. The results do illustrate the importance of distinguishing between required reading and additional background study (i.e. basic or more than required). This distinction was not made by Adams (1979) who only referred to 'reading for course programme' (p. 509).

Adams also identified interaction as a key element in students' perception of involvement and by allocating it a separate category she distinguished it from other forms of learning activity (e.g. reading). Similarly, Terenzini et al. (1982; 1984) measured interaction but kept the dimension separate from their classroom and social involvement scales[8]. In the present study it has been argued that a distinction between involvement activity and interaction is artificial as interaction is one example of students' learning behaviour. With this in mind interaction was included in the 'activity' category of the coding grid. Of the students who referred to

interaction (n=34, 68%) fourteen limited this to in-class interaction, eleven referred only to out-of-class discussion and a further five mentioned interaction on academic matters both in and out of class.   Only four students mentioned social relations as an important aspect of their involvement definition.   In fact only one student referred to her participation in course related extra-curricular activities (i.e. French Club).

In the interviews first year students gave greater emphasis to interaction than than they did in the open ended questions. In fact 71.4% of this group mentioned interaction in the interview - considerably more than the 40.8% of students who mentioned interaction and participation in the open ended questionnaire.   This finding suggests that once at university, involvement through discussion increases in importance.   It appears that effective in-class discussion between tutor and students is particularly important in encouraging involvement. However, the provision of opportunities for out-of-class interaction between students and between students and staff must not be overlooked. Peter made it clear that his limited involvement was in fact largely due to a lack of just such occasions. As his comments on page 165 indicate.

The results of this study indicate that students perceive interaction (principally on academic matters but also social exchange) to be an integral part of their experience of involvement activity.

Students gave further support to the role of outcome as part of their perception of involvement. It was interesting that interviewed first year students placed more emphasis (41.4%) on deep outcomes (e.g. integration of ideas, development of personal meaning and the application of learning to the 'real world') than they did in the questionnaire responses (20.3%)[9]. This

increased emphasis may again illustrate a change in perception of involvement from school to university study.

Involvement as a perception of course requirements

In the questionnaire data, a clear distinction emerged between involvement as:

1. regular attendance and completion of course work - in other words completion of basic requirements.

2. engaging in more work than actually required to pass.

These findings were reinforced in the interviews with 26 students referring to involvement in terms of fulfilling basic requirements and a further 22 defining involvement in terms of doing more than required[10]. In three cases it was not possible to determine the response category.

It is important to note that most students who gave basic definitions did make it clear that the activities were carried out with thoroughness and some commitment. The difference between basic and more than required is reminiscent of Hudson's (1968) concepts of syllabus freedom and syllabus boundness. Students who go beyond the basic reqirements of the course, for example engaging in additional reading are unlikely to feel constrained by the syllabus and its assessment requirements. It is interesting that involvement enables some students to follow such a path.

Involvement as depth of approach

The interview data developed and strengthened the links between involvement and a deep approach that were suggested by the open ended analysis. When students talked in more depth about their perceptions of involvement it became clear that a relationship did exist between these two concepts. This was illustrated by student comments on the outcome of involvement through references to understanding and improvements in the quality of work (e.g. creativity of essays) and to a lesser extent, by learning activities that required deep processing.

A simple distinction between 'basic' academic activities as quantitative and 'more than required' academic work as qualitative was not possible. Significantly qualitative differences appeared within both types of activity.

1. Basic. Some involved students (n=11) adopted a deep approach while carrying out basic course requirements (e.g. thinking about what was said in lectures, engaging in discussion in tutorials) while others referred to the amount of basic work undertaken in quantitative terms (e.g. pages read, number of lectures or tutorials attended) (n=15).

2. More than required. Similarly those carrying out extra activities made similar qualitative distinctions. At the deep level a clear indication was given of an attempt to understand the material and or make it personally meaningful (n=11). While a further 11 students perceived doing more than required in terms of additional time or effort[11].

The relation between student perceptions of involvement and a deep approach was further demonstrated by links between involvement experience and personal commitment, for example learning for yourself rather than for assessment requirements.

Involvement as personal or academic

Miller (1977) distinguished between academic and personal involvement. In his paper academic involvement referred to involvement of a student with the subject matter while the latter term related to social interaction. As the above discussion has demonstrated, interaction was certainly an element in student definitions of involvement but in the present study very few students (n=2) referred to social interaction with students or staff at a level separate from discussion of course-related material. However the students in this study perceived personal and academic involvement in different terms. This perception is consistent with learning as engaging with the material at a cognitive level (i.e. academic) on

one hand, and on the other an attempt to make course content personally meaningful (personal).

The following quotes illustrate the difference between personal and academic learning.

Mahdur *'I still believe involvement means learning and understanding what you are doing'.* (academic)

Henry *'They really want to get into it. Learn all about the subject...just sometimes thinking about a Chemistry problem'.* (academic)

Ann *'If you don't enjoy it you end up being a bit detached from it. Doing what's required and I find that in subjects I don't enjoy so much I don't get so involved in'.* (personal)

Gail *'If I like the subject...I will go the further step and try and do more with it...it's the satisfaction of relating it to reality and perhaps thinking of how markets and how firms and how consumers and that relate...I try to get away from the theory and actually look and see for the reality of it'.* (personal)

The role of personal involvement in the development of understanding is discussed by Ramsden (1985) and by Ford (1979). The latter also argues that personal meaning is essential for lifelong learning. This distinction indicated that for at least some students involvement is more than learning at a 'deep active' level (Entwistle, 1981). Cognitive activity is supplemented by attempts to seek meaning. The role of personal meaning and commitment is consistent with my own definition of involvement.

Course vs subject involvement

Involvement in the subject matter but not the course was explicitly referred to by four students. In this theme, involvement is directed at the subject matter in a field of study. In one case the text was interesting, as was the subject matter of the course but positive feelings were not encouraged by the work as taught. Students really wanted to get actively

involved but course factors (e.g presentation, workload, assignments) prevented this.

For example, Clare commented. *'It's in the text book it could be* (interesting), *we had a multi-choice test and studying for that was quite interesting and that's why I wanted to do the course, it really disappointed'.*

Emma made a similar remark about the same course. *'I think the content could be interesting but I don't think it's very well presented...in lectures it's all very disjointed...no overall picture'.*

CONCLUSION

The interview themes give further support to the results of the open ended analysis which demonstrated that students perceive involvement in quantitatively and qualitatively different ways. The main findings of this chapter are as follows:

1. Involvement was perceived by students as a combination of activity, experience and outcome. For many students, involvement is associated with some positive feelings (these may not be expressed directly in the definition of involvement but rather in their involvement experience[12]). The enthusiasm that illustrated full involvement further demonstrates the role of affect. Involvement behaviour is exhibited in a range of ways – most of which are time consuming. Thus Miller's (1977) claim that students generally view involvement in terms of time spent seems correct. However the present study was also able to distinguish between time spent on basic requirements and time spent on extra study.

2. Involvement activity is perceived as either performing basic requirements or engaging in more work than required. It was particularly interesting that this distinction was further delineated on a qualitative level. Apparently some students view involvement as carrying out

quantities of basic activity (e.g. they go to all the lectures and read all the relevant chapters of a text). However there are other individuals who engage in the same activities but do so in qualitatively different ways. These students give consideration to what is being discussed in lectures and attempt to evaluate what they read in the text book. A similar quantitative and qualitative distinction is apparent for those students who describe involvement activity in terms of doing 'more than required'.

3. An important element in students' perception of involvement was course-related interaction as opposed to broader social exchange. However, the wording of the question asked students to focus on involvement in study so this finding is not unexpected. Adams (1979) included interaction in her list of involvement categories but did not include interaction in her definition. The results of this study suggest that interaction should be included if one is to attempt to list all the key involvement activities. Terenzini's (Terenzini et al., 1982) separation of classroom and social involvement from interaction is not supported as the students in this study clearly saw interaction as part of the involvement experience.

4. Despite students' attempts to produce a general definition of involvement (as they were asked to do in the open ended question) it was clear from the interview transcripts that involvement is a course specific response. Students made clear distinctions between courses in terms of their level of involvement. Their specific responses were mediated by a combination of personal and course related factors. These are discussed in detail in Chapter 7.

5. The emergence of levels of involvement from the data was interesting and suggests that a difference exists between students' generalised definitions and their actual experience. The three levels of involvement were course specific and reflected qualitative and quantitative differences.

Adams' (1979) definition of involvement was a comprehensive if rather lengthy one.

'Engaging in the activities of course programme with thoroughness and seriousness, feelings, motives, purposes, and self direction or capacity of commitment and checking where study is learning, as a personal undertaking'. (p. 511).

In general terms this study gives support to this definition as many of its features have reality for students. However motives and purposes relate more specifically to reasons for involvement rather than being part of its nature (a distinction that Adams actually makes in her paper). Furthermore, students, while as a group identifying many of these aspects in a collective definition, give widely differing definitions as individuals. Some of these perceptions refer for example, to personal commitment and self-direction while others comment on regular lecture attendance and completion of tutorial readings.

As a definition, involvement as a commitment expressed through active engagement with the task as proposed in this thesis has validity for a number of students. Even students who might interpret active engagement as completing a tutorial reading before attending the appropriate tutorial, see involvement in terms of some commitment (in terms of thoroughness). Not all involved students expressed this commitment as a personal response however. It appears that involvement and the deep approach can be expressed with or without *personal* commitment.

Thus the concept of involvement (as perceived by students) is variable and this variability may result from the interaction of range of course-related and personal factors. This question will be examined in the following chapter.

NOTES

1. The category 'experiential did not have any subsets (see description given below).

2. The category + data describes the percentage of students including a particular category in their response. For example experiental+ includes definitions of involvement that referred only to experience as well as those that included experience with one or more other categories. This is calculated as a percentage of the total number of students in that group. To continue with the same example, 49.5% of all seventh form students made some reference to involvement as experience.

3. The percentages do not total 100 because the grid used for open ended question analysis was based on the assumption that students could include comments from several subsets in any one category.

4. These activities can be seen to be basic in terms of lecturer expectations, although it can be argued that attendance at lectures in a course where assessment is based totally on written assignments, lecture attendance is optional.

5. In the coding grid, interaction and deep level activities were separate subsets in the 'Activity' category

6. A total of 58 students were interviewed.

7. The importance of self-direction as a factor in the development of involvement is discussed in Chapter 7.

8. The following item was included in the classroom involvement scale 'expressed views in class' (Terenzini et al., 1982).

9. The percentage of students referring to deep level outcomes as an aspect of involvement experience did not differ markedly between the open ended question (57.1%) and the interview (62.1%).

10. One student (Philip) indicated that ideally involvement meant doing more than required but in practice he carried out basic activities. This student was therefore included in both the 'basic' and 'more than required' subsets. The eight non-involved students were not included in this analysis.

11. Two students gave multiple responses. Philip gave a quantitative response in the 'basic' and 'more than required' subsets and another student (Ralph) gave a qualitative and quantitative 'more than required' response. Three responses were unclear.

12. It is possible to distinguish between students definition of involvement which may reflect their view of an abstract concept and their actual experience of being involved in a course or range of courses. The experience may of course differ between courses while the definition is unchanged.

CHAPTER 5

INVOLVEMENT, APPROACH TO LEARNING, EDUCATIONAL ORIENTATION AND SEX DIFFERENCES

In the previous chapter it was shown that students gave a range of definitions for involvement that differed in terms of quantity and quality. The purpose of this chapter is to determine whether a student's definition and actual experience[1] of involvement is related to students' general approach to learning, their educational orientation (reason for attending university) or sex[2] (aim 2 p. 111).

APPROACH TO LEARNING

All seventh form students completed the Approach to Study Inventory (Entwistle and Ramsden, 1983) in order to provide background information on approach to learning and to enable students to be selected for interview on the basis of either a high meaning or high reproducing score[3]. Additional questions were added to the inventory in Q1 and Q2 which were designed to give an indication of a student's general level of involvement[4]. The following section compares the results of the ASI analysis to those obtained in overseas research using university students (Watkins, 1982a, Entwistle and Ramsden, 1983).

ANALYSIS OF APPROACH TO STUDY INVENTORY

In general these results (Table 5.1) of the principal components analysis support those obtained by Ramsden and Entwistle and indeed much of the research done in this area (e.g Thomas and Bain, 1982; Watkins, 1982a). The deep and surface approaches are clearly seen in factors I and II. Factor I describes the former, loading on the dimensions 'use of evidence', 'relating ideas,' 'intrinsic motivation', and 'deep processing' as well as a

'strategic approach'. This pattern suggests a student who is aware of the demands of the task but is also interested in the material and wishes to gain an understanding of it. Factor II supports the findings of Entwistle (Entwistle and Ramsden, 1983) in that a clear surface approach emerged. This is in contrast to the surface/confusion factor of Watkins (1982a) which had significant loadings on surface approach dimensions such as 'fear of failure', as well as 'disorganised study methods', 'negative attitudes' and both learning pathologies.

Table 5.1   Approach to learning - Seventh form students (n=230)

DIMENSIONS	FACTORS				
	I	II	III	IV	V
Surface processing		.63			
Syllabus bound		.53	.39	.32	
Extrinsic motivation			.37	.70	
Fear of failure		.66			
Use of evidence	.78				
Relating ideas	.72				
Deep processing	.78				
Intrinsic motivation	.51		-.55		
Negative attitudes			.82		
Achievement motivation				.78	
Strategic approach	.50			.33	-.32
Disorganised			.48		.50
Globetrotting					.69
Improvidence		.72			
Comprehension learning	.39				.67
Operation learning		.72			
Eigen values	2.55	2.39	1.71	1.52	1.40

Factor I   Deep approach
Factor II   Surface approach
Factor III Negative attitudes
Factor IV   Achieving approach
Factor V   Disorganised and Superficial

In the present study, 'disorganised study methods' and 'negative attitudes' loaded on factor III. Factors IV and V give support to the two-way split of the achieving approach indicated by Entwistle and Ramsden

(1983). However, while factor V closely resembles their disorganised and dilatory approach with loadings on 'globetrotting', 'disorganised study methods', and 'comprehension learning' there is a notable difference from Entwistle and Ramsden's pattern of results on factor IV. The expected loading of extrinsic motivation on the surface approach (factor II) did not occur, rather it appeared on factor IV in conjunction with achievement motivation. This finding supports that of Watkins (1982a) and the later research of Entwistle and Ramsden (Ramsden, 1984).

In contrast to the results of Watkin's study, the achieving factor obtained here suggests a student with strong extrinsic goals who uses a range of strategies to achieve the best marks with some indication that he/she works within the requirements of the syllabus. These results and those obtained by Watkins at Australian National University do partly question the strength of the relationship between motive and strategy, at least between extrinsic motivation and the surface approach.

'Extrinsic motivation' also loads on factor III which is strongly defined by negative attitudes. This factor was not identified by other research. Apparently a group of seventh form students possessed negative attitudes to study and a lack of interest in their courses. The work that they did undertake was limited to the confines of the syllabus and performed for extrinsic reasons. Further analysis suggested that these students did not attend university (see discussion below).

The data indicates that extrinsic motivation exerts a complex influence on study patterns. On one hand, it is associated with an approach that could be seen as detrimental to effective study (factor III) and on the other it is associated with a potentially more successful strategic approach (factor IV) associated with a desire for high levels of performance.

The division of the dimension of syllabus boundness across a range of factors suggests a diffuse influence. This finding has not been particularly

marked in other studies using university students and may reflect the somewhat formal programmes run in some seventh forms where the syllabus is directed towards external examination requirements.

Students intending to enrol at university

Further analysis of the dimension scores using only those students definitely intending to enrol at university, revealed some interesting results (Table 5.2).

Table 5.2   Approach to learning - Students intending to enrol at university (n=172)

DIMENSIONS	I	II	III	IV
		FACTORS		
Surface processing		.61		
Syllabus bound		.52		.38
Extrinsic motivation		.	.31	.71
Fear of failure		.68		
Use of evidence	.73			
Relating ideas	.68			
Deep processing	.74			
Intrinsic motivation	.56		-.38	
Negative attitudes			.68	
Achievement motivation				.73
Strategic approach	.42		-.34	.40
Disorganised			.64	
Globetrotting			.65	
Improvidence		.70		
Comprehension learning	.59		.37	
Operation learning		.74		
Eigen values	2.50	2.30	2.06	1.57

Factor I	Deep approach
Factor II	Surface approach
Factor III	Negative and disorganised
Factor IV	Achieving approach

The results were almost identical to those of Ramsden and Entwistle (1983), the exception being the loading of 'extrinsic motivation' on the achieving and negative attitudes approaches as before. The most significant

finding was that 'negative attitudes to study' no longer defines a separate factor. Table 5.2 shows that while 'negative attitudes' still loads on Factor III, it is combined with 'disorganised study methods' and 'globetrotting'. This factor now reflects a combination of disorganisation and negative attitudes to study. A finding which suggests that it is those students either uncommitted to university study or definitely opposed to it who display these characteristics. New Zealand seventh form students intending to go to university in the near future appear to be a similar group to the first year university students of other studies.

Table 5.3 Involvement included as a dimension - Seventh form students (n=230)

	FACTORS				
	I	II	III	IV	V
Deep processing	.76				
Relating ideas	.70				
Use of evidence	.76				
Intrinsic motivation	.57		-.53		
Surface processing		.62			
Syllabus bound		.53			
Fear of failure		.66			
Extrinsic motivation			.40	.67	
Disorganised			.47		.51
Strategic approach	.47				
Negative attitudes			.82		
Achievement motivation				.79	
Comprehension learning	.40				.59
Globetrotting					.69
Operation learning		.72			
Improvidence		.72			
Involvement	.57				
Eigen values	2.8	2.4	1.7	1.5	1.4

58.23% of variance

Factor I   Deep approach and involvement
Factor II   Surface approach
Factor III   Negative attitudes
Factor IV   Achieving approach
Factor V   Disorganised and superficial

Involvement as a dimension in ASI

The results presented in Table 5.3 indicate a relationship exists between involvement as defined by the questions included in the ASI and the other deep approach dimensions (see also Appendix J for correlations of ASI dimensions including involvement). This finding suggests that students who typically adopt a deep approach to learning also intend to become involved in their studies.

Further support for a relationship between involvement and a deep approach came from correlations between the Q2 dimensions (Table 5.4). Both first and second year data produced a moderate correlation (0.49 and 0.41 respectively) between deep processing and involvement scores. It is also interesting to note that extrinsic motivation and involvement scores were negatively correlated (-0.36, -0.31). So that while further support is given to the existence of a link between involvement and a deep approach, no observable relation appears to exist between a deep approach and extrinsic motivation (-0.15, -0.07), students who are involved seem unlikely to indicate high levels of extrinsic motivation. The significance of this finding is discussed below (p. 204)

Table 5.4 Relationships between Q2 dimensions - first year (n= 80) and second year students (n=64)*

	Surface		Involve		Extrinsic		Achieve	
Deep	.02	(.006)	.49	(.41)	-.15	(-.07)	-.01	(-.09)
Surface			-.02	(.04)	.07	(.26)	.15	(.28)
Involve					-.36	(-.31)	-.002	(-.003)
Extrinsic							.28	(.27)

* correlations for second year students given in brackets

OPEN ENDED RESULTS

Cross-tabulation was carried out to determine whether any patterns emerged from the open ended data in terms of relationships between response categories or between a category and factors such as grade index

and ASI dimension score. This analysis was purely exploratory. It had been expected that some relationship may exist between involvement definition (e.g. in terms of deep or surface activity) and stated involvement outcomes (qualitative or quantitative). No such patterns emerged. This may be due to the fact that students were asked to give a general definition of involvement but their comments about benefits were usually specifically related to particular courses. However second year students who indicated involvement in some or all of their courses tended to obtain higher scores on the deep approach dimension (Q2) than those who were not involved. It was noted that involved students did tend to obtain lower surface scores than non involved, however the difference was small (Table 5.5). This pattern was not demonstrated in the first year data.

Table 5.5 Median score on deep and surface dimension (Q2) for first and second year students with differing degrees of involvement.

	deep	surface
YR2 (n=66)		
All/some involvement	17.0	9.0
No involvement	14.5	10.5
YR 1 (n=78)		
All/some involvement	16.0	9.0
No involvement	16.0	9.0

INTERVIEWS

The approach to study inventory (Q1 and Q2) provided a useful means for classifying students into the 'deep' and 'surface' interview groups and in general, student comments supported their ASI dimension scores (Table 5.6). However there were inconsistencies where a student's interview comments indicated a deep approach to learning but they did not obtain high scores on the deep approach dimensions in either Q1 or Q2. This may have been because the student's experience had changed his/her attitudes to learning since completing the ASI or a score measuring general approach to learning

did not accurately reflect responses to individual courses. If this latter proposition is correct it would provide support for researchers like Laurillard (1979) who have argued for the role of context in determining approach.

Table 5.6 Match between ASI score and judges' categorisation as deep or surface from interview transcripts[5] (n=38)

Approach (ASI)	Approach to learning (interview)		
	Deep	Surface	Combination
Deep	11	0	6
Surface	3	15	3

Deep and Surface themes

The following themes emerged from the analysis of the interview transcripts and distinguished students who adopted either deep or surface approaches to learning. These themes develop the existing distinction between deep and surface approaches[6] in the sense that they support the existence of the concepts, but introduce additional themes that can be used to identify them.

1. Active vs Passive view of learning

Students classified by the judges as adopting a deep approach were more likely to take an active part in their learning be it through joining clubs, interacting with academic staff or using active study methods (Table 5.7). Furthermore these students were more likely to have made a conscious decision to undertake a course of study. For example choosing Arts subjects over Commerce because of personal interest. Jarvia expressed her active approach as follows: *'I do some of the problems, if I don't understand one then I look in my book for reference then I do some problems until I understand it'.*

Ruth had a general enthusiasm for learning. *'I really do like learning. I like learning about things that interest me...it's just such a terrific opportunity to do it'.* She expressed an active approach to learning. *'I think I could find something of interest in any course...I've never really done a course that I thought was bad'.*

Table 5.7 Active and passive students by approach to learning and level of involvement (n=58)

	Involvement		
	Full	Limited	None
Active			
Deep approach	15	1	0
Surface approach	5	1	0
Combination	6	2	1
Passive			
Deep approach	3	0	1
Surface approach	7	6	5
Combination	3	1	1

There was a tendency for some students with a surface approach to lack personal control over why they were at university and how they went about studying. A passive acceptance of personal and course inadequacies was quite common. Another example of a passive approach was the study strategies mentioned by some students. For example, taking lecture notes as a means of avoiding boredom. Others knew that they could study more effectively but lacked the energy or enthusiasm to change. Such fundamental differences in attitude were expressed in most topics covered in the interviews. For example Nigel had made no attempt to improve his poor performance. *'I think I'm going to fail a couple this year that's just due to pressure I think and me not coping with it - not even trying to'.* Grant expressed his passive approach thus, *'I'm sort of disinterested even though there is a test coming up'.* His note-taking strategy was not undertaken as an active attempt to learn but rather

to avoid boredom. *'I write down a lot because it keeps me from being bored'.*

Bruce had not followed his own interests in coming to university but rather taken a passive approach to his choice of studies. The stimulus to do a Commerce degree had come from information given in the sixth form. *'Some guy from university said, "Right if you want a good degree go for a BCA in ACCY and INFO". That's where it started from'.*

2. Reliance on previous learning

The ability to make use of one's existing knowledge, using it as a base for further learning is seen by Svensson (1984) as an indication of deep processing and essential for understanding. Students who adopted a surface approach were more likely to restrict their learning to what they already knew. Some of these students gained security and a belief that they were intellectually quite able from such a strategy. Courses that presented new material or developed new concepts from existing knowledge were seen as difficult and accordingly disliked. On the other hand, individuals with a deep approach preferred new material. For example, Sarah felt a sense of satisfaction when the work was difficult or different from previous experience. She was critical of students choosing subjects as easy options. Her own view was that it was important to look at a course not just in terms of

'Enjoyment and interest' but also 'stimulation...what you are going to get out of it too...You hear about people going for soft options and you think I'll be good at it because I've done umpteen years of Latin so I'll breeze through this. What's the point really cos you are not going to learn anything from it if it's just going to be a rehash of what you already know'.

Beth stated that she built new learning on existing knowledge.

'Most of the English and History ones I really enjoyed because they were subjects I'd never come across before and so it was

quite new and interesting and other ones where it was building on previous different parts of it which I'd never looked at or thought about before and different ways that particular people teach or present a certain topic'.

Brent relied on his seventh form material.

'In POLS I still rely on my seventh form background a little bit to help me in essays because it (POLS) *is a subject I hadn't done and I've found that helped me a lot and I didn't have to understand too much'.*

Sue made the following comment of her first year Maths course.

'I quite enjoy it actually cos I can feel quite bright (laughs) *may not be but I feel...because I've done it before I know what I'm doing just makes you feel good when you know what you are doing'.*

3. Awareness of learning processes

All the students had some views on their experience of learning. They talked honestly about their experiences and perceptions of university. It became apparent that students with a deep approach demonstrated a deeper understanding of their own learning processes or at least were better able to express their perceptions. They had already directed a degree of thought towards their own learning. Furthermore students who adopted a deep approach tended to talk at greater length and with more enthusiasm about themselves and the courses they were doing.

It is possible to explain this difference in terms of their greater ability (as measured by school performance) as shown in Table 5.8. More able students may have better developed metacognitive skills and thus it is the able students using a deep approach, who are aware and can express their experience of learning.

Table 5.8 Interviewed students' academic performance (median scores) by approach to learning and level of involvement[7] (n=58)

	Deep	Surface	Combined
Full involvement			
Bursary mark	315	269	293
Sixth form	6.5	12.0	8.0
Grade index	2.4	1.5	1.45
Number of students	18	12	9
Limited involvement			
Bursary mark	365	301	245
Sixth form	10	9.0	17
Grade index	2.1	1.9	1.1
Number of students	1	7	3
No involvement			
Bursary	263	279	251
Sixth form	14.0	12.5	11.0
Grade index	1.5	1.9	0.8
Number of students	1	5	2

Given the higher level of school performance of students with a deep approach it is not surprising to find correspondingly higher university performance (Table 5.8). It cannot be concluded from this data that involved students (except those combining a deep and surface approach) do better at university than non-involved individuals who have adopted the same approach. Rather, it seems that for surface students at least, involvement appears to be associated with poor performance. Table 5.8 shows that despite a similar level of school performance, fully involved students who adopt a surface approach obtained a lower grade index (1.5) than their non-involved colleagues (1.9). One might speculate that this is because students with a surface approach tend to display their involvement in terms of time spent and thus they are disadvantaged because there is not enough time left to spend on other work.

4. Quantitative perception of learning

This perception took two forms. The first reflected the belief that knowledge existed as a quantity, an amount to be transferred from the source to the learner, stored and either retained or forgotten. Such a perception is described by Saljo as a concept of learning at level two (Gibbs, Morgan and Taylor, 1982). The second perception was described by students who believed that performance could be improved by doing more work or spending more time at one's studies. Guy compared his study time to that of his friends. Although he perceived he spent less time in study, he passed whereas they did not, largely due to an attitude and approach to exams. His friends seemed,

'Brighter than me and they do a lot more work than me, I know that they do a lot more work than me...I seem to lift myself just before an exam...I think it's an attitude I think you know your limits you know whether you've got enough in your head before the exam and it's just a case of all these facts might be filed away in your head but they are not in order and it's getting in the right mental frame before you get into the exam'.

Jane believed that the difference between a 'B' and an 'A' grade was the amount of reading done. *'I could have got a 'B' just by regurgitation* (of lecture notes), *but they give you an extra reading list and to get a 'B1' or an 'A' I would have had to do some extra reading'.*

5. Short term retention

Students with a surface approach tended to complain about short term retention of course material. The effect of this was three fold. First, it meant they had to do more work, as Brent complained. *'The books I've read earlier in the year I don't remember that clearly - have to go back and read them all again'.* Suggesting that in Ausubel's terms material had been originally rote learnt and students had to engage in overlearning or make it meaningful at a later date to ensure retention

(Novak, 1977). Secondly poor retention often meant poor performance. For example Grant commented.

'If I'm concentrating on rote learning it I often don't get the indepth meaning of it which makes it harder to try and remember it...I can explain it if I have an indepth knowledge but (if) *I rote learn it I do forget some of it. I can't go back and work out what its about logically* (when confronted with new material in an exam)'.

Lastly it precluded one getting an overall picture of the course. Ralph expressed this point as follows:

'With the final exam you can spend the time at the end and put it all together and get something out of it whereas with this internal asessement you might have three tests next week and what happens if you do the first third in that test and then you just forget about it and don't ever need to know it again...you never get an overall picture of what he's trying to get at'.

It appears that short term retention may not only have a direct effect on student performance but it also increases the amount of time that must be spent in revision and makes it more difficult for students to gain an overview of the structure of a course.

Involvement and approach to learning.

This section examines the relationship between reported involvement and approach to learning as defined by the judges[8]. The discussion focuses on three points. The first two relate to an initial concern that a deep approach and involvement were synonymous. The results of this analysis show this not to be the case as:

1. not all students with a deep approach are involved in their study (Table 5.9)

2. over half the students with a surface approach perceive themselves to be fully involved in their study (Table 5.9)

Table 5.9 Involvement of students with deep and surface approach (all groups)[9] (n=58)

Approach to study	Involvement		
	Full involvement	Limited	No involvement
Deep	18	1	1
Surface	12	7	5
Combination	9	3	2

3.   Approach to learning is an important factor when one examines the nature of students' involvement experience. As Table 5.9 shows, students with a surface approach who indicated some involvement were more likely to indicate that this involvement was limited.

Biggs (1985) argued that the learning environment is more likely to affect the involvement of the surface group, and personal characteristics such as interest will determine the involvement of deep students. This proposition will be discussed in Chapter 7 in the light of the results of the present study.

The findings presented above, lead one to conclude that most students are fully involved in at least one of their courses. The experience of this involvement is likely to be full if that student utilises a deep approach. In fact it seems likely from examining the transcripts of students who used a combination of a deep and surface approach that a deep approach is likely to be used in the courses where the student is involved.

In fairness to two students, (one not involved and the other with limited involvement) it must be pointed that lack of full involvement was not necessarily due to personal disinterest or apathy as both expressed a desire to become more extensively involved.

Bruce, for instance, had defined involvement as 'being willing to formulate my own ideas and opinions pertaining to a particular course'. In reality he felt frustrated because pressure of assignments prevented involvement.

'I find it totally detracts from anything I might learn, all I'm doing is I pour one assignment out and I've got another one due in a couple of days. I'm just an assignment processor... I don't have enough time for reading or researching or anything like that...I've got ideas running round in my head which is good but I sort of don't have a medium to express them, the assignments don't allow for it and I keep them all trapped up inside me'.

Peter wanted some social interaction with staff.

'I would like to meet more of the lecturers casually, there is a Maths common room...which nobody goes to...its a pity I would like to get to know some of them because I could follow up a topic or something'.

This illustrates the point that while a few (n=3) students in the non involved sample stated that they were not involved in anything because they had better things to do with their time, most were, or at least tried to be involved in at least one course. Peter, a second year non-involved student is the most obvious example. Similarly, there were students in the involved group who either were not as involved as they would like to be or had tried and become disillusioned (e.g. Simon and Ben). The involvement score on the ASI is therefore misleading as it gives a general index of involvement rather than being course specific.

Although no differences were found between involvement definition and approach to learning in the cross-tabulation of the open ended questionnaire responses, analysis of the interview transcripts showed that students with a deep approach were more likely to *experience* involvement as 'more than required' to pass the course than in the 'basic' sense. In contrast the pattern was reversed for students using a surface approach. In addition to the general categories of 'more than required' and 'basic',

Table 5.10 gives details of the number of students perceiving each category in qualitative or quantitative terms. This distinction was discussed in detail in the previous chapter. The results indicate that approach to learning is not only associated with a perception of involvement as 'more than required' or 'basic' activity but more specifically reflects qualitative differences in perception of these two categories.

Table 5.10 Approach to learning and perception of involvement in terms of course requirements[10] (n=50)

Approach	Involvement			
	Basic		More than required	
	Quant.	Qualit.	Quant.	Qualit.
Deep	0	6	3	8
Surface	12	2	4	0
Combination	3	3	2	4

CONCLUSION

The principal objective of this section has been to discuss the relation between involvement and approach to learning. Factor analysis suggested that as expected, involvement and a deep approach are related. The nature of this relationship was further clarified by the interview data which demonstrated that a deep approach and involvement are not identical concepts. In the first place, not all students with a deep approach were involved and secondly, students who adopted a surface approach clearly indicated that they were involved in their study. What was interesting was the different pattern of involvement experience between students with a deep approach and those with a surface approach. Almost all the 'deep approach' students were fully involved in their study while only half of the students using a surface approach fell into this category. Furthermore 'deep approach' students were more likely to engage in qualitative involvement

activities that were perceived as being more than required to pass the course. This finding provides further evidence for the claim (Entwistle and Ramsden, 1983) that students using a surface approach tend to restrict their study to that prescribed by the syllabus (see also Table 5.1). It is not unexpected, given their definitions that the deep and surface approach are associated with quantitative and qualitative learning activities respectively. Indeed one of the themes to emerge from this study was a focus on quantitative aspects of learning by students adopting a surface approach.

EDUCATIONAL ORIENTATION

The following section examines the relationship between educational orientation (Taylor et al., 1980) and involvement. The discussion will focus first on the open ended analysis, and secondly on the results of the investigation of students' educational orientation before looking in detail at a possible association with involvement. The chapter concludes with an examination of the relationship between student involvement, university faculty and sex differences.

OPEN ENDED QUESTIONS

Analysis

Preliminary analysis of the question 'Please give your reasons for wanting to attend university' was based on Taylor's (Taylor et al., 1980) categories of vocational, academic, personal and social educational orientation. In general, the categories accurately reflected the students' responses. It would also have been possible to describe much of the data using Taylor's intrinsic and extrinsic subgroups. However, these would have provided too general a summary of the points made by the students. For example, some students saw university as the path to a well-paid job, others just wanted the qualification. Taylor would have categorised these

as both 'vocational extrinsic' as they indicate little interest in the course content for its own sake. However, each differs in terms of the clarity and nature of goal. Those responding 'qualification' appear to have given little thought about the future direction of their lives as the qualification itself is the goal. The former group want to gain a qualification which is the means to their stated objective. Although the course is a means to an end they may be more likely to respond to material that can be shown to be of value in the workplace. Several of Taylor's categories were used in the analysis, namely 'continue education', 'specific interest' (extrinsic and intrinsic academic orientation respectively) and 'broadening' (personal intrinsic). New subsets were developed from the data itself in order to complete the analysis (see Table 5.11).

Three further categories were included in the grid (in addition to vocational, academic, personal and social). During the reading of the responses it became clear that a small group of students gave reasons that could not be coded using Taylor's categories. The first was termed 'time' and covered students who perceived university as providing an opportunity to decide on their life options. Those who indicated that they had no other options were categorised as 'no better alternative'. The 'family' category included students who enrolled at university because of family expectation or pressure. There were no subsets for these additional categories. A possible reason for the absence of these responses in Taylor's scheme may be that the views expressed here seem more typically those of direct school leavers rather than the mature students who formed the major group in Taylor's work.

Table 5.11 Educational orientation categories and subsets

Category	Subset
Vocational	qualification
	good/well-paid job
	specific career
	interesting/satisfying job
Academic	continue education
	content specific
	skill development
Personal	growth
	personal experience
	compensation
Social	social objective
	experience university
Time	
No Better alternatives	
Family	

The following section gives a detailed description of each category and subset. Quotations are used to illustrate fine coding distinctions.

1. **Vocational** .

Students who made any reference to university as leading to future employment or providing them with a qualification. Four subsets were used:

a. Qualification. Students simply wanted a qualification. They made no mention of its purpose.

b. Good/well-paid job. For this and the following two subsets the students had a clear vocational objective. Good/well paid job was a general category in the sense that students made no mention of a specific career. The degree or education they hoped to obtain would improve general employment prospects and/or lead to a well-paid job.

c. Specific career. The student mentioned a specific career (e.g. to become an accountant or architect). A comment such as a better job in business was too general for this category and coded as good/well-paid job.

d. Interesting/satisfying job. The student did not specify a particular occupation but rather hoped that the degree would help him/her obtain a job with these positive qualities.

2. Academic.

This category included all responses that referred to learning either generally as in the case of the subset 'continue education', or more specifically. For example, interest in individual courses or intellectual skill development such as critical thinking.

a. Continue education. A number of students made this generalised comment. As mentioned above (p. 194) this subset reflects Taylor's extrinsic academic form of orientation. The student does not mention specific course content and perceives university as the next step on the learning ladder. A student who suggested that they wanted to further their education *to obtain a good job or specific career* was coded in the appropriate vocational category subset.

b. Content specific. The key element here is that the student specifically mentioned course content or had a particular area of interest. The content specific subset is similar to Taylor's intrinsic academic where the course content is of importance.

c. Skill development. This subset included comments that referred to acquisition of certain academic skills (e.g. independent study skills). One could argue that skill development is one example of 'academic extrinsic' because there is no direct concern with course content. However, it was felt that a student who wished to develop certain intellectual skills would have a different focus on learning than one who saw university as an academic progression. Students of the former category are likely to be

more active in their learning and more self-evaluative of their learning strategies because they have clear educational objectives.

3. Personal .

Some students made reference to the contribution of university to themselves. This was either in the form of stimulating personal growth, providing personal experiences or the opportunity to test their ability.

a. Growth. This category embodied the idea of *change* as it relates to personal growth. For example the belief that university would provide an opportunity to broaden the student's horizons. It is similar to Taylor's category of broadening (personal intrinsic) in that it reflects a perception that interaction with course content would produce personal change.

e.g. *'Extension as person'. 'To broaden my mind. To gain confidence...'*

b. Personal experience. Taylor et al. (1980) did not refer to this broad subset . Some students saw university as an experience. They did not suggest or indicate a desire to develop or change in any way. The responses included in this subset covered affective and cognitive aspects of experience. Students referred to their enjoyment of learning or the experience of a sense of challenge or achievement.

e.g. *'I like it'. 'I enjoy learning'. '...a self gratifying exercise'.*

c. Compensation. A little-used category akin to Taylor's 'personal extrinsic'. University provided the opportunity for these students to test themselves or demonstrate competence to others.

4. Social .

This category covered reasons that made reference to the social side of university life.

a. Social objectives. Students wanted to meet a range of people and make friends.

b. Experience university. Some students referred to the spirit of university life and their intention to join in a range of activities. This subset was placed in the social category rather than personal experience subset to represent student emphasis on involvement in social and sporting activities rather than the desire for personal growth. Enjoyment of life outside learning was of importance here.

e.g. *'...enjoy varsity life'. 'To experience university life'.*

5. **Time**.

A small number of students wanted time to reflect and decide on their future options. Because of its emphasis on planning and reflection, this category was not necessarily seen as representing negative views on learning.

6. **No better alternatives** .

In contrast to 'time' this response did seem to reflect negative or possibly neutral views towards learning. The students who gave this response had no clear reasons for attending university other than filling in time and/or avoid getting a job.

7. **Family**.

A small number of students (n=5) wrote about the role of family expectation in affecting their decision to attend university.

Results

Data on students' educational orientation was gathered from open ended responses to the question 'please give your reasons for wanting to attend university'. The results given here are based on three sets of data.

1. Seventh form students who indicated that they intended to enrol at university the following year. This sample did not differ from the orientation of the total seventh form group.

2. The Q2 responses of first year students (a subset of the seventh formers who subsequently enrolled at VUW).

3. The Q2 responses of the second year student group.

The majority of the responses could be described using Taylor's educational orientation categories of vocational, academic, personal and social, although additional categories and more detailed subsets were added in this study. The pattern of results is similar to those found in the younger students at Surrey University (Taylor et al., 1980). Table 5.12 shows that over three quarters of the first and second year students expressed some vocational orientation. The most frequently mentioned reason related to obtaining a good job rather than directing study at a particular career. This finding is not unexpected as almost all the students in this sample were enrolled in general degree courses (Arts, Science and Commerce). Academic reasons for enrolment were given by over half of the first and second year university students, although this was generally in combination with other orientations. A desire to continue learning or pursue a specific course was mentioned by approximately half the students (the latter subset was only mentioned by 42.9% of academically oriented first year students). Personal and social educational orientations were uncommon. Numbers of students responding to the additional orientation categories of 'time', 'nothing else to do' and 'family' reasons were small although of sufficient size to justify separate coding. 'Family' reasons was an important category for non Europeans in the sample. Three out of the five students in this sample were Asian (2 Chinese and 1 Cambodian student) and the fourth was Samoan leading one to *tentatively* suggest that parental wishes may be an important consideration for these students.

The most significant finding from the seventh form data is the large percentage (45.3%) who gave vocation as their only orientation. It is also worth noting that seventh form students placed less emphasis on academic reasons - those that did include this orientation were likely to see this in

terms of continuing their education rather than furthering specific interests.

Table 5.12 Educational orientation - Categories

	7th Form		YR1 Q2		YR2 Q2	
	n	%	n	%	n	%
Categories						
Vocational(V)	78	45.3	18	22.8	21	33.3
Academic(A)	21	12.2	8	10.1	8	12.7
VA	38	22.1	23	29.1	15	23.8
VASocial(S)	4	2.3	5	6.3	4	6.3
Others	31	18.0	25	31.6	15	23.8
Total	172		79		63	
Max error%		3.8		5.6		6.3
Vocational+	141	81.9	61	77.2	49	77.8
Academic+	75	43.6	49	62.0	34	54.0
Personal+	17	19.8	8	10.1	12	19.0
Social+	9	5.2	17	21.5	6	9.5
Time+	3	1.7	10	12.6	3	4.7
Nothing else+	4	2.3	4	5.1	3	4.7
Family+	2	1.2	4	5.1	1	1.5
Number of orientations						
One	102	59.3	28	35.4	29	46.0
Two	61	35.5	36	45.6	24	38.1
Three	9	5.2	10	12.7	9	14.3
Four+	0	0	5	6.3	1	1.5

Table 5.13 Educational orientation - Sub sets (calculated on total number in category)

	7th Form		YR1 Q2		YR2 Q2	
Vocational						
Qualification	20	14.2	13	21.6	8	16.3
Good job	75	53.2	37	60.7	28	57.1
Specific job	32	22.6	10	16.4	9	18.4
Academic						
Continue educ	60	80.0	27	55.1	19	55.9
Specific course	24	32.0	21	42.9	20	58.8
Personal						
Change	5	29.4	3	37.5	6	50.0
Experience	10	58.8	6	75.0	7	58.3
Social						
Social	8	88.9	12	70.6	4	66.7
Univ. life	5	55.5	4	23.5	2	33.3

The comparison between the first and second year university students (Q2) is an interesting one. The first year students were less likely to be solely vocationally oriented. Although an almost identical percentage of students included vocational reasons in their answer, the difference seems to be due to the fact that the first year students were more likely to combine academic and vocational reasons. This accounts for a similar percentage of students in the 'vocational+' category with fewer YR1 students in the 'vocational' category. This is in combination with more vocational academically oriented and 'academic+' first year students.

Multiple orientations were more commonly held by the university students than the seventh form group, over half of whom gave single category responses. This pattern is especially marked in the first year Q2 data. By the time students reach the second year of study, their objectives may be more focused as more students give one orientation (46.0%) than their first year colleagues (35.4%). This change in emphasis reflects the increase in second year students who are solely vocationally oriented (33.3% as opposed to 22.8% of YR1).

Subset analysis of the Q2 data (Table 5.13) revealed that the majority of vocationally oriented students are more concerned with general employment prospects or future financial reward than with a specific or personally satisfying career. It is interesting that students seem less certain about specific career objectives when at university. Academically oriented students emphasised continuing education. This pattern is marked for the seventh form sample with 80.0% referring to furthering or continuing their education. Second year students were more likely to refer to specific interests (58.8%) than their younger colleagues (42.9%). Perhaps second year students are more aware of specific areas of study once they move from the generalised 100 level courses. Seventh form students may only be vaguely aware of course content or the range of courses offered[11].

The small numbers of students with the remaining orientations make it difficult to go beyond comments about the category data.

Cross tablulation of open ended question data

Cross tabulation did not reveal any relationship between involvement definition and educational orientation category. The only patterns to emerge were those between educational orientation category and grade index and dimension scores. Table 5.14 shows the grade index and dimension scores ('extrinsic motivation', 'deep approach' and 'involvement') for students with a vocational/academic (VA), or academic (A) orientation who specified a particular interest in a subject area and those with the same orientations who saw university as the opportunity to further their education (VAc and Ac).

Table 5.14 Median grade index and dimension scores for first and second year students with vocational/academic and academic orientation

	YR1				YR2			
	VAc	VA	Ac	A	VAc	VA	Ac	A
GI	1.7	1.9	1.5	1.9	1.6	2.5	1.4	2.5
Extrinsic mot.	4.0	5.0	5.0	4.0	7.0	3.0	6.0	2.5
Deep learning	13.5	17.0	16.0	15.0	13.5	21.0	14.0	16.0
Involvement	16.0	19.0	17.0	20.0	18.5	21.0	19.0	20.0

The data illustrates the difference in Grade Index (GI) of those expressing some interest in the course material (VA and A) and those who just want to further their education (VA cont and A cont). The trend is the same for both first and second year students with GI lower when the academic orientation reflects a concern with academic progression rather than expressed interest. Similarly extrinsic motivation is higher for the second year 'continuing education' group. Those with an interest in content appear to score higher on both involvement and deep learning.

This finding gives further support to a relation between (a) intrinsic motivation as measured by interest in content and (b) involvement, demonstrated by correlations between the dimensions of involvement and intrinsic motivation in the ASI (Appendix J).

INTERVIEWS

The interview transcripts indicated that educational orientation was related to student involvement. In the first interview all students were asked why they had enrolled at university and it was clear that those who expressed some academic educational orientation were more likely to be at least partially involved in their courses.

Academic educational orientation

Fully involved students enjoyed learning for its own sake and expected to find their courses stimulating and of personal interest. Their outlook extended beyond completing the course and obtaining a number of credits and they (particularly second year students) enjoyed courses that were challenging and criticised those that were not or other students who just did the minimum required. Clare explained her choice of degree as follows:

'It was really because I enjoyed the subjects, but not really any job...you see I'm not too good at the BCA line. I couldn't possibly do that and so I did what interested me - English. I was told Sociology could be quite helpful for the jobs'.

Helen expressed a similar view. *'I've come to the conclusion that my BA isn't really going to be much good to get a job so what I'm going to do is to do it out of interest and broaden my knowlege'.*

It was interesting to note that 76.9% (n=30) of the fully involved students included an academic educational orientation in their Q2 open ended question response.

Vocational educational orientation

The degree students enrolled for tended to determine the importance of vocational reasons (Commerce students placing greater emphasis on vocational relevance than those students studying for an Arts degree regardless of their approach to learning). However, of those individuals with a vocational educational orientation, involved students tended to be more interested in the course content for its own sake than those who were not involved. Twelve students who gave a vocational/academic educational orientation were fully involved, whereas only two individuals with an orientation that *included* vocation and *excluded* academic reasons were fully involved. It was interesting to note that five of the eight non-involved students were in this latter group.

A further point was the distinction students made between the courses students were doing for vocational reasons and those in which they had an interest. Involvement was more common in the latter as illustrated by Tom (a Commerce student) who thought that his Commerce degree would be useful, largely because of the combination of courses he intended to do.

'The two marketing courses, International Marketing and Marketing Management are really useful in the real world and marketing is the one thing that has grown because everyone has got to sell everything and Economics is a really good foundation for the whole sort of macro system so it should be really helpful'.

However Tom would have liked to,

'Major in International Relations, but there's really no point in that...finding a job is pretty hard and although you might enjoy it you might as well get some good degree behind you and then go and enjoy yourself if that's possible, that's what I'm doing a BCA towards, I do enjoy Economics but sometimes would like to be doing other things I really enjoy...If I was doing History probably get into it a lot more'.

Although fully involved students were concerned about their future careers (n=29), they commonly combined this with an academic orientation (n=20). For a number of students in these samples, academic concerns outweighed the vocational. For example, Rachael had become more aware of work skills.

'I don't feel as if I've got very much to offer as far as work skills go. I've got the skills but nothing definite. I keep thinking if I did a BCA I would have something direct (ly) vocational...I have had second thoughts...no I don't regret it because I do enjoy doing German and French'.

Involved students enrolled in vocational courses tended not to see these purely in terms of a means to an end, rather they had some intrinsic interest in the field of study (e.g. business or industrial relations). It was noticeable however that vocational considerations assumed greater importance as students neared the end of their degree programmes (refer Chapter 7 p. 277). Sandra initially enrolled at university to further her education, however in the second interview she had *'changed my degree to BCA mainly because I felt that BA wasn't going to give me much to choose from'* (vocationally). Interest was still a consideration in her choice of major subject. *'I wish I had started off doing a BCA in Business Adminstration, that's the only other one* (other than her actual major of Political Science) *that interests me'.*

Educational orientation and approach to learning

Educational orientation was a key factor in determining students' attitudes to learning and the quality of their learning activity. An interest in the subject or an enjoyment of learning for its own sake was often related to a deep approach to learning and/or involvement in study (see 'Commerce students' p. 206). In some cases, students who had enrolled at university for extrinsic or vocational reasons, and therefore tended to do the bare minimum of study in most of their core courses had enrolled in an

area of study of particular interest. In these cases the quality of learning, in terms of both processing and outcome was improved as John's comments illustrate.

'I picked up an Architecture course this half and the atmosphere is so different (from commerce). *Is just fantastic...it's so interesting and the attitude of the students and the lecturer too cos he's interested in it. Everyone gets involved you don't mind doing the work...you really want to get stuck in...We have site visits for Arch ...we've been to the Australian Chancery and the Berhampore flats but you go and have a look then you write your essay after that, which is much more fun than reading the essay question'.*

John compared his short term retention of Economics material to that in Architecture. *'For ECON I'll say that got that over now I can forget it all, roll on the next subject...* (for Architecture) *I thought I don't want to lose what I've learnt, I want to learn more'.*

Support for the existence of a relation between educational orientation and approach to study comes from the open ended questions. While there was little difference in the numbers of students with a deep or surface approach who reported a vocational educational orientation (alone), overall 82.9% of students with a surface approach included vocational reasons in their response but only 64.3% of students with a deep approach did so. These results suggest that a surface approach is consistent with a vocational educational orientation. On the other hand, students with a deep approach are more likely to give academic reasons as at least partly responsible for their enrolment at university.

Commerce students

Subject area differences were mentioned above. During the analysis of the interview transcripts it became clear that a major factor in Commerce (BCA) students' low level of involvement in their Commerce courses (only three students stated that they were fully involved in a

Commerce course) was the result of vocational educational orientation where students had little (if any interest) in the field and perceived the degree in terms of its marketability.

Eighteen of the twenty Commerce students, expressed clear extrinsic vocational educational orientation (Taylor et al., 1980). Students saw their university study leading to a qualification which was sought after by the business community and would ultimately result in money and advancement. For example Bruce commented, *'the Commerce side of it doesn't interest me too much - more of a meal ticket than anything'.*

Conformity was another reason for enrolling in the popular Commerce programme as Guy said,

'I've got the interest which I can expand on after I've got rid of the practical side...you've got a degree in Anthropology or Archeology (his area of interest)*...and people think he's a bit of a wierdo, he's doing something a bit out of the norm, he's not in the main stream'.*

Sixteen of these students made clear distinctions between courses of personal interest and those that were necessary to attain vocational objectives. Thirteen were studying 'interest' courses outside the Commerce faculty (e.g. History, Architecture and English). The 'interest' courses were perceived in more positive terms than 'vocational' courses (particularly those in the Commerce core). Of the seven students who were only enrolled in Commerce papers, six expressed interest in another area of study, comparing it favourably with the compulsory core subjects. Two individuals had consciously limited their study in these areas because of lack of marketability. Rob felt that the Commerce core courses were *'painful, but what use is a degree which you do the subjects that interest you. I mean you come out with nothing'.*

An important distinction between Commerce students and those in other faculties (79% of the latter expressed some vocational orientation)

was that the former did not enrol in courses that combined interest and career aspirations. They tended to compartmentalise courses into vocational and therefore 'relevant' on one hand and interest and therefore 'hobby' on the other.

When one looks at the involvement of these students (Table 5.15) one can see that almost half of the Commerce students are either not involved or involved in a limited way. A further seven of those who are categorised as fully involved display this level of commitment to their particular interest subjects as John's comments have illustrated. Arts and Science students are more likely to experience full involvement.

Table 5.15 Involvement by faculty and approach to learning (n=58)

Deep approach

Faculty	Full	Limited	None
BSc	6	0	1
BA	9	0	0
BA/BSc	1	0	0
BCA*	2	1	0

*neither student was involved in a Commerce course

Surface approach

	Full	Limited	None
BSc	3	2	1
BA	1	1	1
BCA*	6	4	1
LLB	1	0	1
Arch	1	0	1

*two fully involved students and one with limited involvement directed their involvement to courses outside the Commerce faculty.

Combination

	Full	Limited	None
BSc	3	0	0
BA	3	1	0
BCA*	3	1	2
LLB	0	1	0

* All three fully involved students and one with limited involvement were not involved in any Commerce courses.

SEX DIFFERENCES

Although an exploration of sex differences forms a significant part of educational research (e.g. Matlin, 1987), such differences have not been examined in any depth in either the approach to learning literature[12] or the work on involvement (e.g. Miller, 1977; Adams, 1979; Astin, 1984). The early Swedish research was based almost totally on female subjects (Marton and Saljo, 1976b; Dahlgren, 1977) with no comment made about the possibility of differences between male and female students (Entwistle and Ramsden, 1983; Marton et al., 1984). However, when one examines the data presented above more closely in terms of gender (Table 5.16), it can be seen that not only are fewer female students enrolled in the Commerce Faculty (15.3%) than males (50.0%) but that the majority of females (across all faculties) are fully involved (80.8%). Furthermore, 42.3% of females in the interview sample adopted a deep approach while only 28.1% of males did so. In fact, half of the female students were enrolled for BA degrees and of this group 84.6% were fully involved in their studies.

It is too simple to ascribe higher involvement to Arts Faculty students since while this is true for female students, the pattern does not hold for males (one of the three male BA students indicated full involvement). Similarly, while only 50.0% of the male BCA students were fully involved; three of the four female Commerce students were fully involved in one or more BCA courses. In contrast, seven of the eight fully involved male Commerce students directed their involvement to courses outside their Faculty. These results indicate that a complex interaction exists between sex, degree, approach to learning and level of involvement. The results presented here are exploratory and further research is needed to clarify the nature of such a relationship.

Table 5.16 Involvement by sex, university faculty (degree) and approach to learning (n=58)

FEMALE STUDENTS (n=26)

Degree	Deep			Surface			Combined		
	F	L	NI	F	L	NI	F	L	NI
BA	8	0	0	1	0	1	3	0	0
BCA	0	0	0	2	0	0	1	0	1
BSc	3	0	0	1	1	1	1	0	0
LLB	0	0	0	1	0	0	0	1	0
TOTAL	11	0	0	5	1	2	5	1	1

MALE STUDENTS (n=32)

Degree	Deep			Surface			Combined		
	F	L	NI	F	L	NI	F	L	NI
BA	1	0	0	0	1	0	0	1	0
BCA	2	1	0	4	4	1	2	1	1
BSc	3	0	1	2	1	0	2	0	0
LLB	0	0	0	0	0	1	0	0	0
BSc/BA	1	0	0	0	0	0	0	0	0
Arch	0	0	0	1	0	1	0	0	0
TOTAL	7	1	1	7	6	3	4	2	1

CONCLUSION

The major focus of this chapter has been the examination of the relation between involvement, approach to study (Entwistle and Ramsden, 1983) and educational orientation (Taylor et al., 1980). To establish the validity of such concepts in a New Zealand context comparisons were made between

1. the results of the approach to study inventory obtained from Wellington students and those presented in overseas research based on university students (Watkins, 1982a; Entwistle and Ramsden, 1983).

2. the educational orientations of New Zealand secondary students intending to enrol at university and those produced by Taylor et al. using British university students.

APPROACH TO LEARNING

Principal components analysis revealed a marked similarity between the results of Entwistle and Ramsden (1983) and the seventh form students who intended to study at university. The deep and surface approach factors emerged although extrinsic motivation loaded on both the achieving factor and a negative and disorganised factor, a finding that has more recently been incorporated into the work of Ramsden (1984). Of some significance was the finding that a factor defined by a strong loading on 'negative attitudes' emerged from the analysis of the total seventh form sample. This group of students included those who did not intend to study at university or were unsure of their plans and it was suggested that the attitudes of these students contributed to such a factor. Further support for the validity of the deep and surface approaches was given by the considerable agreement between ASI score and the judges' perception of a student's general approach to learning as given in the interviews.

APPROACH TO LEARNING AND INVOLVEMENT

From these results it does appear that involvement and approach to learning are related. Firstly, the involvement dimension loaded on the deep approach dimension of the ASI analysis (r=0.49), and secondly, second year students who indicated involvement tended to obtain higher scores on the deep approach dimension than did those who were not involved in any course. Interview analysis provided support for the view that involvement and a deep approach, while related, are not synonymous. Although eighteen of the twenty students adopting a deep approach were fully involved, almost half of the students using a surface approach also indicated full involvement. Thus it is possible to be fully involved whilst adopting a surface approach. Approach to learning may be related to students' perception of involvement activity as more detailed analysis of definitions of involvement indicated that students were more likely to experience involvement as doing 'more

than required' if they adopted a deep approach. In contrast a perception of involvement as performing 'basic' activities was more common amongst 'surface' students. To take this point one step further, students using a deep approach were more likely to view the 'basic' and 'more than required' categories in qualitative terms, while a quantitative view was expressed by a majority of students using a surface approach. It appears that students who adopt different approaches to learning perceive involvement in qualitatively different ways.

EDUCATIONAL ORIENTATION

In general terms the educational orientation categories present in this data were similar to those developed by Taylor et al. (1980) although the pattern of results was different. For example the seventh form students were more likely to be vocationally orientated than those interviewed by Taylor and her colleagues. However three new categories of orientation were added. These appeared to reflect a pattern of response more typical of school leavers than the mature students that formed a major part of Taylor's work.

EDUCATIONAL ORIENTATION AND INVOLVEMENT

The open ended results did not indicate a clear relation between educational orientation and involvement although there was a suggestion that students with a clear interest in the course material obtained higher scores on the involvement dimension score (as well as a higher grade index and deep approach score). The interviews gave clearer demonstration for the existence of a relation between involvement and educational orientation. Students with an academic orientation were more likely to be involved in their studies than those with a strong vocational orientation. The key factor appears to be interest. Students with an interest in their studies are more likely to be fully involved as demonstrated by the number of

vocationally oriented Commerce students who restricted their involvement to courses where they had a personal interest.

SEX DIFFERENCES

Exploratory results suggested that gender is an important factor that must be considered when one examines the relationship between the factors discussed here. It was demonstrated that the majority of female students in this sample were fully involved in at least one course regardless of the approach to study adopted. For male students there appears to be a more complex interaction between faculty and level of involvement.

These results have demonstrated that the relationship between approach, educational orientation, gender and involvement is complex and it is impossible to attribute causation to any one factor. What does seem to occur is that educational orientation and approach to learning create a climate for the development of involvement which (as will be discussed in the following chapter) has a beneficial influence on the quality of learning.

NOTES

1. The distinction between definition and experience of involvement is an important one. Experience reflects students' descriptions of what they actually do when involved and reflects the reality rather than the ideal which may be described in the definition. Twenty students indicated that their experience of involvement was different from their view as presented in their definition of involvement. All but six of these students still agreed with their initial definition.

2. Sex differences were not initially identified as an important factor in the exploration of involvement in study. However, analysis of the data revealed that in fact marked differences appeared between male and female students involvement experience. Sex differences are therefore included in the discussion of factors affecting involvement.

3. Second year students were selected on the basis of high deep or surface scores obtained in the short form of the inventory (Q2).

4.   The ASI involvement score measured general involvement rather than involvement that was specific to a particular course or subject area. In other words, students were asked to make general statements about their intentions and experiences of involvement (e.g. 'Even if I'm not actively participating in a class discussion, I always try to think critically about what is being discussed' 'At university, I intend to become really involved in the topics that interest me')

5.   The results are taken from students who gained high scores on deep and surface approaches in the ASI and were thus included in the 'deep' and 'surface' interview groups. The twenty students from the involved and un-involved interview groups are not included in Table 5.6 because they were selected for interview on the basis of comments on involvement rather than deep or surface approach score.

6.   In a discussion of the development of the concept approach to learning Ramsden (1985) argued that the meaning of 'deep' and 'surface' has been broadened. 'The surface approach has become identified with an external concern on the student's part with assessment tasks and their requirements, implying a process of learning in which alien material is impressed on the memory for a limited period with the specific intention of satisfying assessment demands. In contrast, the deep approach is internal – the student is concerned with the content and structure of the task and on integrating its meaning with his or her previous knowledge, personal experience, and interests' (p. 54). In the light of the results of this study, however, a concern with the demands of assessment (as demonstrated by cue awareness and active cue seeking) was not confined to students using a surface approach although students using a surface approach were more likely to be exclusively concerned with learning for assessment.

7.   Firm conclusion are difficult to draw given the small sample size.

8.   The researcher and two independent judges were used to ensure the validity of interview themes.

9.   While all the students in the involved interview groups indicated some involvement, a further six of the 'non-involved' students indicated that they were actually involved in at least one course.

10.   The eight 'non involved' students are not included in Table 5.10. The table includes two students who gave multiple responses, one of whom gave a quantitative and qualitative response in the 'more than required' category and the other gave quantitative responses in both categories.

11. The questionnnaire (Q1) was completed before the relevant university calendars had been published.

12. Watkins and Hattie (1981; 1985) did include gender as a variable in their investigation of factors affecting students' approach to learning. In the former study Watkins demonstrated that female students scored higher on the pragmatism, neuroticism and dependence scales of Biggs (1976) Study Behaviour Questionnaire than males. They concluded that young male students were in greater need of study skills counselling than were their female colleagues.

CHAPTER 6

THE EFFECT OF INVOLVEMENT ON LEARNING

Does involvement affect the quality and quantity of learning? If so, how is this effect mediated? This chapter examines the evidence from student perception of involvement outcomes and explores the relation between involvement and measures of academic performance to answer these questions. The chapter is divided into five parts; the first details the analysis of the open ended question directed at student perceptions of the benefits of involvement. The second section focuses directly on the effect students perceive involvement to have on learning outcomes and the effect student involvement has on academic achievement. In the third part of the chapter, consideration is given to involvement as a disadvantage for learning. Fourthly the implications of non involvement for students' learning experience are discussed. The chapter concludes with a proposal of how the relationship between involvement and learning may be explained.

OPEN ENDED QUESTIONS

Students were asked 'If you have been 'involved' in a course, in what ways have you benefited from the experience? The question was intentionally broad and permitted inclusion of non-cognitive outcomes. Responses fell into three categories (personal, academic and interactive) and are listed in Table 6.1.

Table 6.1 Categories and subsets of benefits of involvement

Categories	Subsets
Personal	positive affect
	growth
	increased interest
Academic	qualitative
	quantitative
	skills
Interactive	discussion
	staff
	social

CATEGORIES

1. Personal.

Students listed a range of personal benefits. This category related to the development of positive feelings, a perception of personal growth or increases in personal interest[1].

a. Positive affect. As the result of involvement individuals felt more positively about themselves or the course. Examples included feelings of enjoyment, self satisfaction or a sense of achievement.

b. Personal growth/development. Involvement resulted in a perception of self improvement, for example, increases in confidence, self awareness, a broader outlook or improved self-discipline.

c. Interest/motivation increased. The experience of involvement had increased a student's level of interest or motivation for that course or subject area.

2. Academic. This category related to benefits in learning

a. Qualitative outcome. Clear evidence was given of some deep level learning outcome. For example, students were better able to relate material, were able to think or appreciate other points of view or identify points of personal relevance.

b. Quantitative outcome. The student described quantitative benefits such as better marks, passing the course, better retention or increases in the amount of knowledge. Students who gave the response 'learning' were coded as quantitative unless clear reference was made to deep learning.

c. Skills. Some students believed that involvement had improved their study skills. They found it easier to study, worked harder or developed particular skills. Responses were included in this category if they referred to the processing of information.

3. **Interactive** . For some students interaction was part of their definition of involvement (refer Chapter 4) while for others, increased interaction between staff and/or peers was an involvement outcome. This category included formal and informal contact between staff and students. However, no student in this sample mentioned informal contacts with staff.

a. Discussion. Involvement had given students greater opportunity to share their ideas with others.

b. Staff. In this subset, students specifically mentioned interaction with staff, usually on a one-to-one basis.

c. Social. Students referred to increased social contact. They had made more friends in courses where they were involved.

Additional information sources used were cross-tabulation betweeen category response and grade index, multiple regression analysis using grade index (dependent variable), school performance and short form ASI dimension scores (independent variables) and interview transcripts.

INVOLVEMENT AND LEARNING

The following section discusses student perceptions of the benefits of involvement on learning (qualitative and quantitative). It begins with an examination of the results of the open ended questionnaire responses before looking in detail at interview material.

OPEN ENDED RESPONSES

The number of students responding to this question was greater than those giving reasons for involvement which suggests that even students who have had limited experience of involvement may have views on its value.

Academic outcomes were stressed by first year students who divided their responses equally between qualitative and quantitative academic benefits (Table 6.2). Second year students were more likely to combine personal and academic outcomes, stressing the quantitative benefits with some mention of skill development. An unexpected finding was the frequency with which the more experienced second year students identified quantitative benefits[2]. This finding leads one to suggest that involvement activities are increasingly directed towards the improvement of grades and/or amount retained. While this does not preclude the development of personal meaning and understanding it does reflect students' immediate concerns.

Personal outcomes were most frequently combined with academic outcomes. Within this category, positive affect was significant for both groups of students, with first year students also commenting on personal growth. This latter finding is not unexpected given that this group are coping with a new set of personal and study expectations, quite different from those they experienced at school. One would expect the student to undergo some personal changes to deal with such demands. Apparently these changes are recognised in courses where students feel a sense of involvement. Few students felt that involvement had actually increased their interest suggesting that rather than helping students to become more interested as suggested by Biggs and Telfer (1987), involvement is stimulated by interest that may exist before enrolment in a course or be developed by the course itself- a point that is discussed in the following chapter with reference to the findings on reasons for involvement.

Table 6.2 Benefits of involvement

Categories	YR1		YR2	
	n	%	n	%
Personal	4	6.9	9	16.1
Academic	27	46.6	14	25.0
Interactive	6	10.3	1	1.8
Personal/Academic	12	20.7	24	42.9
Other	9	15.5	8	14.2
Total	58		56	
Personal+	23	39.7	38	67.9
Academic+	44	75.9	46	82.1
Interaction+	15	25.9	9	16.1
Max error %		6.5		6.6

Subsets (calculated on total number in category)

Personal				
Positive affect	14	60.9	26	68.4
Growth	11	47.8	11	28.9
Increased interest	3	13.0	5	13.2
Academic				
Qualitative	23	52.3	17	37.0
Quantitative	25	56.8	29	63.0
Skills	9	20.5	6	13.0
Interactive				
Discussion	8	53.3	5	55.5
Staff	4	26.7	0	0
Social	8	53.3	5	55.5

The emphasis on surface (quantitative) outcomes was unexpected. However, on reflection the tendency for students to define involvement in terms of time spent rather than level of input may partly explain the results. These results may also indicate that students more readily view learning in quantitative and tangible terms. Furthermore grades are an important criterion of progress at university as Becker et al. (1968)

demonstrated. The second year students in this sample may be more aware of this 'hidden curriculum'.

Increased interaction was not a significant benefit for the second year students, although this category was mentioned by one quarter of the first year students. It is important to note that 35.8% of the second year students identified interaction as part of their definition of involvement (Table 4.3 p. 155). This suggests that for a number of second year students, involvement means interaction while for first year students it is more likely to be the *product* of involvement. For both groups of students involvement tended to increase interaction between other students in a class or social context rather than with staff. The pattern of results may reflect the different experiences of first and second year students. Tutorial discussion is new to first year students and perhaps involvement gives them the confidence to participate. Three first year and six second year students specifically mentioned that increased confidence had resulted from their involvement. For example, in the interview Beth reflected on her first year experience.

'I think I'm more confident dealing with other people. I remember in the first year for most people it was really quite hard in tutorials - actually speak out in a group that's quite important'.

INTERVIEWS

In the interviews, students placed considerable emphasis on the qualitative benefits of involvement (67.4%). This may reflect a change of emphasis although it is probably due to the method of selection of students for interview (high ASI scores on deep and surface approaches). As Table 6.3 shows, students adopting a deep approach all perceived involvement to result in qualitative benefits whilst those using a surface approach focused almost entirely on quantitative outcomes. Students with high scores on these approaches are concentrated in the interview sample. A

further contributing factor to the high percentage of students giving qualitative responses may also be attributed to the fact that ten of the twelve students combining approaches gave such a response. It may also be the case that in the interview students were given time to reflect on their learning in more depth than might have been the case when they completed the open ended questions. The emphasis on quantitative learning in Q2 is also likely to be a function of the timing of the questionnaire as students completed Q2 in the week before mid-year examinations.

Table 6.3 Involvement outcomes by approach to learning (n=50)

Approach to learning

Outcomes	Deep (n=19)	Surface (n=19)*	Combined (n=12)*
Qualitative academic	17	2	9
personal	1	0	2
Quantitative	1	14	4
No response	0	4	0

* Note: In some cases students gave more than one response.

A range of qualitative benefits were noted by the interviewed students, all of which were either personal or academic (see Table 6.3). These are discussed below.

Qualitative benefits

1. Academic

Academic outcomes included improved understanding and more effective processing strategies. Academic benefits were clearly important outcomes of involvement as Table 6.3 shows.

a. Understanding

Six students specifically referred to understanding with a further 14 students relating involvement to integration, and the formation of

relations between ideas and concepts as well as identification of meaning both in a cognitive and personal sense. These reflect a deep approach and according to Marton and Saljo (1984) contribute to understanding and are therefore included in this section of the discussion. For example, John linked his long term learning and understanding of Architecture with its relevance.

'it's just more real you can go out there and look at a house and say, "well that's a grotty piece of architecture". It's just more relevant you know cos it's all around you...just looking at the design its much more understandable, it just means more...everything you learn is going to stay in your head'.

As an outcome of involvement, understanding was important. However, the work of van Rossum et al. (1985) has demonstrated that not all students perceive understanding in the same terms. In the present study, students may state that understanding resulted from involvement but actually mean that *more* information was retained for future use as John's comments illustrate.

To examine this possibility understanding as an outcome was analysed in terms of the conceptual scale developed by van Rossum et al. (1985). Van Rossum and his colleagues demonstrated that students' concept of understanding is related to their perception of learning and teaching. Thus in the present study, two students may identify understanding as a benefit of involvement but on closer examination they actually possess qualitatively different concepts of understanding. With this in mind, students were asked 'what does understanding mean to you?' Analysis of the responses supported the five levels identified by van Rossum et al. (1985)[3]. The categories are listed below and each is illustrated by quotations taken from this study.

i. Student 'knows' the content. Here the student does not perceive understanding as an active process but the sudden realisation that they do

not have any difficulties with the content and it exists clearly in their mind.

Roger *'I suddenly get a grasp of what they are trying to say'.*

John *'You can say well I know it...everything you learn is going to stay in your head'.*

ii. Learning for later reproduction. In this case the student understands what has been learnt when they can make use of the information in an examination or other form of assessment. Fred commented *'I suppose it's marks in tests'.* Prue's comments are given on page 227 and illustrate a view of understanding in terms of marks. She distinguished this from the value of learning.

iii. Understanding as knowing what the material is about and expressing this to others. The student has grasped the main thread of an argument and can express this in their own words to other students or in an assignment. Comments that indicated a sense that the student could see the relevance of the material were also included in this category if the student made it clear that this was not an interactive process. In other words the material as presented seemed relevant to the outside world but the student had made no attempt to transform this into concepts that have some personal meaning.

George *'I can understand it in the context monopoly or open market if I can understand what's happening...I can see these evident in the outside world'.*

Marie *'I can explain it to them'.*

iv. Identification of meaning and formation of relationships between concepts. The student engages actively with the material by not only being aware of the main points in one lecture or one text and explaining them to somebody else (concept 3) but by being able to also form inter-connections between ideas both within and between courses so that overall themes emerge.

Sarah *'In my Greek mythology lecture I had this morning Dr _ said this is a very difficult idea...I think I understood what he was trying to say, my lecture notes made sense and I can put two and two together'.*

Julia *'To know what the point of view somebody is trying to put across and to be able to think about that and to work out what is good and what is bad about it and be able perhaps to bring that and ideas from other people together into an essay or into some sort of central idea'.*

v. The student engages with the material by interpreting it in a personal way and as a result both the student's knowledge and the material undergo qualitative change.

Beth *'Having gained a basic knowledge of the topic and then sort of given the opportunity to be able to think and express your ideas about it. I think it's just the transition from being given the information and then being able to express it in...terms of your own experience'.*

Andrew *'(In) Ancient History everybody gives their own opinion about what few materials they have – leaves you a bit of scope for your own conjectures'.*

As Table 6.4 shows, students who were fully involved and using a deep approach to learning were more likely to perceive understanding in active terms (concept 4 or 5). The results indicate that conceptions one, two, or three were given by students adopting a surface approach whether or not they were involved. A relationship has been demonstrated between concept of understanding and approach to learning which appears to be independent of level of involvement. This finding is consistent with the view proposed here that involvement is interpreted in qualitatively different ways depending on approach to learning; it also supports Svensson's (1977) reference to levels of understanding. It appears that students using a deep approach perceive understanding in terms of personal meaning whilst those adopting surface learning approaches view both

learning and understanding in quantitative terms. One therefore needs to qualify Marton and Saljo's (1984) comments. Rather than understanding being the 'only way to understand learning materials' (Marton and Saljo, 1984 p. 46), a deep approach is more likely to contribute to personal and/or cognitively deep levels of understanding. So these results have shown that when students refer to understanding as an outcome of their involvement, it is necessary to look further and examine their concept of understanding before drawing conclusions about the quality of student learning.

Table 6.4 Concept of understanding, approach to learning and level of involvement (n=58)

Full involvement

Concept of understanding	Deep	Approach to learning Surface	Combined
1	0	5	1
2	0	2	0
3	5	4	6
4	6	1	2
5	7	0	0

Limited involvement

Concept of understanding			
1	0	2	0
2	0	2	0
3	1	2	2
4	0	0	1
5	0	1	0

No involvement

Concept of understanding			
1	0	1	1
2	1	2	1
3	0	0	0
4	0	1	0
5	0	1	0

b. Improvements in processing strategies

In the open ended question 15 students noted that involvement led to improvements in the quality of processing. In the interviews, six students (all fully involved) made a specific link between involvement and processing strategies. For example, Oscar remarked, *'I've improved my knowledge of the field I think, also improved my approach to problems...more rigorous in my approach to them'.* A more critical approach was described by Beth who said, *'I think I've cut away all the excess. I'm more able to look at a topic and decide what the issues are and then to deal with them quite well'.*

These results indicate that in both the interview and open ended questionnaire responses, the benefit of involvement is seen principally in terms of learning outcome rather than the acquisition of skills. This supports the view that the process of involvement itself encourages the use of active processing skills which result in the described outcomes.

2. Personal

In the interviews only three students referred to personal feelings as one result of involvement. For example Jane believed that as a result of involvement she *'enjoyed the subject more'.*

For Prue the benefit of involvement extended beyond grades and into her life.

'BOTY was really worth it because after I'd completed it I felt a real sense of achievement, really proud of it...I suppose you judge it (understanding) *by what marks you get, but the actual value of learning is..if you can walk though the Botanical Gardens and look at the different trees and know what they all are and it gives me enjoyment because it's something that will stay with me for ever'.*

Prue's comments are interesting because of the relation that she makes between personal feelings of pride and achievement (as a result of being involved in a course) and learning that has some enduring personal value. A point that is consistent with Ford's (1979) work in which he links

long-term learning to personal valuing of information. For these students an integral part of the benefits of involvement are positive feelings about learning. However, for the other fully involved students personal feelings of interest and enjoyment were part of their experience of involvement rather than an outcome as such.

This raises the possibility that involvement operates in a cyclical way. In other words, the more you are involved the more positive you feel towards your learning which leads to a desire to become more involved. James described it thus,

'If you pass in the exams and you are fairly happy with the work then you are enjoying it. I find you tend to work harder. It's an incremental thing, you probably find that the people who are doing the best really enjoy the work and really work hard and are more than willing to go to extra lengths and go to the library and work it all through'.

James illustrates the point that positive feelings are part of one's experience and these encourage students to engage in involvement activities.

Quantitative benefits

Reponses to the open ended question indicated that students did believe that involvement resulted in improved amounts of learning (Table 6.2). In the interviews, students like Prue clearly perceived involvement to result in good grades but significantly she gave a qualitative academic learning outcome greater emphasis. However, some (n=9) students perceived the benefits to be purely quantitative as illustrated by Peter *'getting at least B passes'*.

It is interesting that feelings are still important, as Hamish states, *'If I'm interested in something I'll enjoy it and I'll do well at it and if I'm not interested it's one hell of an effort to do well at it'.*

A focus on quantitative outcomes appears to be a function of approach to learning as 14/19 interviewed students typically used a surface approach and only one 'deep' approach student made any reference to quantitative benefits .

INVOLVEMENT AND GRADE INDEX

The results so far have examined the relationship between students' perceptions of involvement and their perceived learning outcomes. It has been demonstrated that students do perceive that involvement improves the quality and/or quantity of their learning. What relation exists between involvement and a student's actual performance? To answer this question, further analysis was conducted to determine whether student involvement (as described in the questionnaire or reflected in an involvement dimension score) was related to academic performance as measured by grade index (GI).

The relation between involvement (as described in the questionnaire) and grade index was examined using cross-tabulations and multiple regression analysis. Cross-tabulations were carried out using category responses to the open ended questions on definition and benefits of involvement. No patterns emerged from this analysis, however more interesting results are demonstrated in Table 6.5 which shows the difference in grade index of students who gave 'basic' definitions of involvement and those who saw involvement as 'more than required'. The trend is the same for first and second year students and shows that students who define involvement as 'more than required' tend to gain a higher grade index than those who see involvement as fulfilling basic requirements.

Table 6.5 Involvement definition and grade index (median)

Definition	YR1	n	YR2	n
Basic	1.50	72	1.20	19
More than required	1.95	23	1.45	32

In addition, students who perceived the benefits of involvement in qualitative terms gained a higher grade index that those who referred to quantitative benefits in their response (Table 6.6). These results are not unexpected given the earlier finding that students with a deep approach are more likely to define involvement as being 'more than required'.

Table 6.6 Benefit of involvement and grade index (median)

Benefit	YR1	n	YR2	n
Academic qualitative	2.00	23	2.25	17
Academic quantitative	1.25	25	1.60	29

There appears to be some benefit (in terms of improved grades) for going beyond the basic requirements of the course. Engaging in extra reading, or general intellectual activity is rewarded by staff. Students who believe that their involvement has resulted in deep level learning also appear to be gaining higher grades than their colleagues who have mastered quantities of information. However, one needs to be cautious when interpreting these results as success (particularly in science) may require a combination of knowledge and understanding (Biggs, 1976). So although Jason argued that understanding is essential for success in mathematics,

'When it comes to the crunch it's your understanding, the more the better. You can rote learn as much as you like and it won't help, especially in Maths. You'll be taught these things in Maths and you may even do all the problems which you are given every week and know how to do them at the end of the week - come to the end of the year exam you are plonked with this question which you have never seen before...they'll (lecturers) *take it one step further*

than they taught you, so you really think about it - it's not just stick in the numbers'.

Henry made the point that in Chemistry *'understanding is just not enough any more. You've got to have both* (factual material and understanding of the principles) *now, if you haven't got the understanding you can't make it, if you don't know enough about the subject...you can't make it'.* This point suggests that for science, at least, success in terms of grades results from mastery of factual content as well as understanding and supports the findings of Ramsden (Entwistle and Ramsden, 1983) and Biggs (1976) who found that subject area differences were important in determining the relative importance of factual information in gaining deep levels of understanding.

Involvement dimension score was included in a regression analysis, conducted to determine whether school performance or ASI dimension scores (Q2) played a role in the prediction of university performance as measured by total grade index[4]. Separate analysis was carried out on first and second year students. It is important to note that the regression analysis was carried out on the Q2 inventory data and therefore represented generalised responses. On the other hand, student comments were course-specific and thus the results discussed in the following section parallel those reported above.

1. First year students

ASI dimension scores played a limited role in the prediction of academic performance (Table 6.7). The only dimension score to act as a significant predictor was the surface approach (negative). An interesting finding was the degree to which school performance (sixth and seventh form) predicted university grade index. This result is consistent with New Zealand research at Victoria (Clift et al., 1984) and Canterbury Universities

(Educational Research and Advisory Unit, 1985), and that conducted elsewhere (e.g. Entwistle and Wilson, 1977; Biggs, 1978; Watkins, 1983c)[5].

2. Second year students

A similar pattern of results (regarding school performance) was found in the second year data (Table 6.8). In addition, grade index was also predicted by a high involvement as measured on Q2 which suggests that for second year students academic achievement is likely to be improved if the student is involved and does not display high levels of surface learning.

Based on the open ended data it appears that students who see involvement as going beyond basic requirements tend to gain higher marks than those proposing a 'basic' definition. The demonstrated relationship between involvement and a deep approach makes it difficult to attribute a causal effect to involvement. It does appear from the open ended responses that a combination of a deep approach to learning with activities that go beyond the requirements of the course is associated with good performance. The regression analysis does provide limited support for the role of involvement as a predictor of academic performance at university, however the principal factor is clearly school achievement.

INVOLVEMENT AS A DISADVANTAGE

The outcome of involvement was not always positive. It caused students (n=4) problems in the sense that involvement activity took up time that needed to be spent on other course work. This may reflect a perception of involvement in terms of hours spent. For example, Clare remarked *'its just a matter of time. You feel as though it's a pity you couldn't be doing only History and spending the amount of time you spend on 42 credits'.* The comments suggest that Clare may be receptive to Parlett and King's (1971) concept of concentrated study where a student is able to become totally emersed in one subject for a number of weeks.

Table 6.7 Maximum R-square improvement for total Grade Index (first year students)[6]

	Bursary	Sixth form	Surface	Involve	Extrinsic	Deep	Achieve
multiple r	0.58	0.655	0.676	0.679	0.682	0.683	0.684
r as %	33.63	42.96	45.76	46.24	46.64	46.7	46.79
probab. >F	.0001	.001	.05				

The results indicate no significant increase in prediction after ENTRY, F6 and SURF were included.

Table 6.8 Maximum R-square improvement for total Grade Index (second year students)

	Bursary	Sixth form	Surface	Involve	Extrinsic	Deep	Achieve
multiple r	0.629	0.673	0.707	0.736	0.739	0.740	0.742
r as %	39.6	45.3	49.9	54.1	54.6	54.9	55.0
probab. > F	.0003	.005	.049	.02			

The results indicate no significant improvement after ENTRY, INV, F6 and EXT were included.

Tom had made a conscious decision not to become involved.

'I don't find I have time for much extra work because I get too involved in it...I just want to do the rest of my work. Some gets so interesting but I'm afraid to start doing it because if I do I know I get too involved and I get tons of books out (of) *the library and start reading it all up, takes me about a week and I don't do anything else'.*

Ruth was clearly over-involved in terms of her time commitment to the French Club.

'I now have a workload of nineteen hours a week...that wouldn't have been so bad except that this year I am president of the French Club and I was in the French play...I've had to take on myself to cook for the French meal so I've just had so little sleep - just a zombie at the moment...haven't really started my major assignment...took down a stupid exhibition...I have this strange kind of compulsion to do things..I feel I should get involved and have to put a lot of effort'.

These results give some support for Astin's (1984) expression of concern regarding over-involvement. Both Astin and the students discussed in this section viewed involvement as a commitment of time and thus high levels of involvement result in overwork, poor performance and in some extreme cases, exhaustion.

NON INVOLVEMENT

This chapter has focused on students experiences of involvement, and the comments discussed above are (in the main) positive. In fact few students were fully involved in all courses. The interview sample did contain eight students who were categorised as not involved in any course. The following section is included because it highlights the distinction between outcomes typical of involvement and those that can be related to non-involvement. Three themes emerged from an analysis of the interview transcripts of these students. Firstly, a desire to be engaged in some other activity away from Victoria University. Secondly, expression of negative

feelings about university study and lastly views on future involvement. They characterise comments made by other students who were not involved in a particular course.

Desire to be engaged in other activities

Six of the eight non-involved students made it clear that they would rather be studying or employed elsewhere. For example Celia had already applied for a job with New Zealand television and Stephen was only concerned with being accepted by Medical School. Bruce was happier working as a house painter.

'I painted all during the holidays. I was a painter I really enjoyed that. I worked eight months including the part time work and I was still enjoying it by the time I finished my contract so maybe I ought to become a painter'.

Negative feelings about study

Negative feelings were expressed by all the non-involved students. For example, Nigel said.

'If I stopped now I don't think it would be that much value other than the social thing...I think there's a very thin line as to whether this has been worthwhile and that's basically because I've passed'.

For Hamish the negative feelings were intense. *'I hate it, I loathe it...it's completely aimless. It's boring. There is a completely negative feeling at the school...It's a total wash-out'.*

Future/past involvement

Only one student (Harry) indicated that he had either never been involved or did not want to become involved. This student restricted his learning to examinable material, aiming for a pass mark rather than high grades.

'As long as the stuff they are doing is really relevant to the exam...I think its alright. In Com. Law we talked about some

really interesting things that actually come up in the exams so it was quite good, went along and had a listen'.

It is interesting to note that Harry, whilst not involved, does identify some interesting course work. In the second interview he reinforced these earlier comments. *'I'm sure I could do it if I wanted to but it takes so much more work I don't think it's worth it and getting a B doesn't really mean much more than getting a C'.* Of those who wanted to increase their involvement Celia and Laura wanted increased contact with academic staff. Bruce was keen to become involved but felt contrained by the pressure and nature of assessment (see quote p. 191). Nigel was not involved in Law. *'I don't get involved in courses or anything'.* This he attributed to *'a lot of pressure on you to pass'.* Ideally Anthropology held a possibility for involvement. *'I think I could be quite interested in the Anthropology if I kept doing it but I never put that much effort into it basically because I don't feel I need to'.* Stephen was starting to develop a specific interest. *'Embryology I'm finding quite interesting'.* Both Sandra and Hamish had attempted to become involved in earlier courses but felt contrained by negative contextual factors.

CONCLUSION

The results discussed above have demonstrated that students identify a range of benefits that result from involvement. Significantly academic benefits are identified by a majority of students. The interview data indicated that a student's approach to learning was a key factor in determining whether students perceived the benefits in qualitative or quantitative terms. The emphasis on quantitative outcome by students using a surface approach may be due to the number of individuals who see involvement in terms of time spent. This view is consistent with definitions proposed by both Fisher et al. (1980) and Astin (1984).

The precise role of personal feelings is still unclear. However it appears that as part of the involvement experience, students enjoy their study and may develop a sense of achievement and satisfaction. Non-involvement is more likely to result in negative experiences and possibly alien.ation as suggested by Goffman (1957) and a second year student (Oscar) in this study who made the following point.

'Where I have not become involved is with lecturers who do not seem to prepare their material adequately and who treat tutorial sessions as formal, lecturing-style times. This only serves to heighten the sense of alienation'.

Some evidence was presented (in the cross tabulation and regression analysis) that demonstrated a link between involvement and good grades, however students do not see this as the principal payoff which related more to improved understanding. Given the high level of cue awareness expressed by both involved and non-involved students, a combination of involvement and cue awareness may be significant in terms of academic success. No student abandoned the syllabus and became totally involved as all were still aware of lecturers' requirements. A combination of doing more than the basic requirements and a level of cue awareness seems likely to be positively related to good academic performance.

Terenzini et al. (1984) argued that classroom involvement was related to personal growth. However, this was not a significant outcome for many students in the present study although some did feel more confident as a result of involvement. Involvement appears to have academic benefits and although personal reactions are important to students, these are study-related and (according to students) unrelated to general personal development.

The results presented here do not support the position of Biggs and Telfer (1987) who suggested that involvement was a key element in the

development of intrinsic motivation. While interest was significant in the development and maintenance of involvement, students did not see increases in interest as an important outcome.

How does involvement act to improve the quality and quantity of learning? It appears from these results that involved students feel positive about what they are doing and want to put effort[7] into their studies and as a result they learn more and/or gain a better understanding of the field of study.

NOTES

1. Given that involvement as personal experience was included by students in their definitions and in comments on the benefits of involvement, the possibility of tautology was not overlooked. The following quotes illustrate that one benefit of involvement is the experience of involvement itself. In other words, a student feels good about what he/she is studying (definition) and through this experience learning becomes more enjoyable (benefit).
    'Enjoying the course - being prepared to do a little extra work for it' (definition). 'I think if you make the extra effort in the course - you make it easier for yourself. You begin to enjoy the course more and understand the course material better' (benefit).
    'Enjoying the lectures and tutorial discussions and feeling the essays are worth putting extra effort into' (definition). 'Received good marks and felt satisfied. Have had a chance to think and have been credited and complimented on my own ideas' (benefit). These quotes have been reproduced in full to illustrate firstly the relation between definition and benefit discussed above and also to point to the fact that they are typical of the range of points raised by students. For each of these students' positive affect is but one element of their perceptions. Nevertheless one needs to be cautious when interpreting these results. They clearly show that personal feelings are an integral part of the involvement experience and the data provided by the open ended questions makes it difficult to precisely identify whether feelings are causal, part of the experience itself or one benefit of involvement. The interview data provides some insights into this question (see p. 221).

2. It was expected that the second year students would be engaging in more specialised study of topics of interest. Involvement would assist students in gaining an understanding of the material.

3.   Van Rossum et al. (1985) focused specifically on the relation between insight and understanding. The paper gives only a brief description of each conception making the parameters difficult to identify.

4.   Total grade index correlated at over 0.9 with the grade index for individual years.
First year students   total GI and 1983 GI = 0.93
                                      total GI and 1984 GI = 0.91
Second year students total GI and 1982 GI = 0.92
                                      total GI and 1983 GI = 0.92
                                      total GI and 1984 GI = 0.89

5.   Biggs (1978) and Entwistle and Wilson (1977) and Watkins (1983c) all found that the degree to which school performance predicted academic performance at university was related to a student's faculty. For example, Entwistle found that 'A' level results were a poor predictor for Social Science student's performance (the correlation being 0.11).

6.   Multiple R analysis was based only on those subjects for whom scores for each variable were available. For the first year sample four observations were missing (i.e. n=74) and two observations were omitted from the second year analysis (i.e. n=64).

7.   Effort is interpreted by some students as regular attendance or for students who have adoped a deep approach to learning it was likely to mean doing more than is basically required to pass.

CHAPTER 7

FACTORS AFFECTING INVOLVEMENT DEVELOPMENT AND CHANGE

This chapter discusses the reasons students gave for their involvement or non-involvement in academic study. It also examines the factors that students identify as important in influencing changes in the amount or nature of involvement. The data used in this discussion is taken from the open ended question 'why or why have you not become 'involved' in any of your courses?' in Q2, and from the interview transcripts. The chapter begins with a detailed description of the analysis of the open ended question. This is followed by an examination of the reasons given by students for involvement and non-involvement in study. At this point the results are integrated and used to propose a set of relationships between a student's intention to become involved, course-related factors and the involvement outcome. To conclude the discussion focuses on involvement change.

OPEN ENDED QUESTIONS

ANALYSIS

The question 'why/why have you not become 'involved' in any of your courses', was designed to elicit reasons for both involvement and non-involvement. The responses to this question were categorised as reasons for involvement or reasons for non-involvement. The analysis of each is discussed below.

Reasons for involvement

Preliminary analysis used two categories (course-related and achievement of objectives). Further examination of the data made it clear

that personal reasons for involvement represented a distinct third category (Table 7.1). Students assumed responsibility for their own learning by acknowledging the role their existing feelings and interests played in determining their level of involvement. Final analysis was based on the three categories ('personal', 'course' and 'objectives').

Table 7.1 Categories and subsets of reasons for involvement and lack of involvement.

Reasons for involvement		Reasons for lack of involvement	
Category	Subset	Category	Subset
Personal	positive affect	Personal	negative affect
	cognitive input		lack of interest
			lack of effort
			workload
			core/credits
			lack confidence
			other interests
Course	positive affect	Course	course content
	cognitive stimulation		staff
	social		class size
	staff		class structure
	major subject		assessment
	course organisation		
Objectives	quantitative		
	qualitative		
	personal		

1. Personal.

This category related to a student's interests or feelings about the area of study or learning itself. The 'personal' category related to statements clearly indicating that the initiative for involvement belonged to the student. The student referred to an existing interest in the general subject area (rather than the specific material presented in the course) or indicated that they had been responsible for their own involvement rather

than responding to course factors such as teaching style or course structure.

For example *'...whether I myself come across something that really interests me'.*
'I am very interested in human development'.
'Because I wanted to learn Maori'.

a. Positive affect. The student stated that they experienced a sense of pleasure when learning about a particular subject area (e.g. Geography). The development of involvement was attributed to these positive feelings.

b. Cognitive input. This subset referred to a student's intellectual input into the course. Reference was made to a long-term interest or to a desire to study a particular subject.

2. Course related.

Clear indication was given by the student that it was the course that provided the stimulus for involvement rather than existing personal feelings, interest or input by the student. In the course-related category, students referred specifically to a particular course (e.g. Architecture 172) rather than the general subject matter such as Architecture or Linguistics.

For example
'...a course that is interesting and you enjoy encourages involvement'.
'I've become involved in some courses because they hold my attention and create interest'.
'If it appeals to me'.

a. Positive affect. Students made specific reference to the development of positive feelings as a result of their study. These feelings contributed to the development of involvement.

b. Cognitive stimulation. Students found the *course* to be intellectually stimulating, understandable or that it dealt with topics the student found interesting.

c. Social. The social climate of the course (including lecturers and students) was perceived as friendly and warm.

d. Staff. Staff actively encouraged involvement through their positive attitudes, effective presentation or offers of assistance.

e. Major subject. Students became involved in the course because it was their major subject. This subset was used once. The student gave no other reason for involvement other than Zoology and Botany were major subjects.

f. Course organisation. The organisation of the course encouraged students to become involved. Examples included provision for tutorial discussion and small classes.

3. Objectives .

The category 'objectives' described statements which indicated that involvement was viewed by the student as a means of achieving a particular goal. To be included in this category the student must describe some future objective. The category provides further demonstration of the role of involvement in achieving objectives as argued by Klinger (1977).

For example
'I have become involved because it is the only means of achieving the ultimate goal of obtaining good results for my degree'.
'To gain confidence'.

a. Quantitative. Involvement assisted the student to achieve quantitative objectives such as passing a course or getting high marks.

b. Qualitative. The student indicated that they wished to reach a deep level of learning such as understanding theoretical principles. To achieve this goal, involvement was necessary.

c. Personal growth. Students wanted to achieve certain personal goals such as increased confidence. The point to note here is that involvement enabled the student to improve themselves or gain something of personal value.

Reasons for non-involvement

It is interesting to note that a higher percentage of second year students gave reasons for non-involvement (79.6%) than did their first year colleagues (59.1%). The former group were also less likely to give reasons for involvement although the difference was small (45.9% and 52.9% respectively[1]). This result suggests that the more experienced students are more familiar with non-involvement than those just entering university. The responses to this question fell clearly into personal and course related factors[2] (Table 7.1).

1. Personal.

Students frequently placed the responsibility for their lack of involvement with themselves. The course itself was not blamed as the following quotes illustrate.

Personal reasons

'I'm not really interested in my BCA core subjects'

'I wasn't that interested in the course at the beginning'.

'I don't always have the time'.

a. Negative affect. Students had negative feelings about the course or study in general. For example they disliked the subject area or did not enjoy learning.

b. Lack of interest. Students stated a lack of interest in the area of study. No comment was made about the specific content of a course.

c. Lack of effort. Individuals did not want to make the effort to become involved.

d. Workload. The information presented here described students' perceptions of their workload demands. With this in mind, workload was included in the 'personal' category. As Svensson (1976) and others (e.g. Novak, 1977) have argued, workload (in terms of hours spent) is partly a function of a student's approach to learning. One should not ignore the very

real demands that courses impose on students in terms of assignments and tests. Clearly such demands are course-related. However, the data collected in this study did not record details of course assessment requirements.

e. Core course/6 credits. The student felt no desire to become involved as his/her courses were either part of a compulsory core programme or just added six credits to the total needed for a degree. In either case the student was unlikely to feel any sense of enthusiasm or interest in the subject matter. This subset was identified as personal because it represented the individual's own view (i.e. the only reason for taking that course was for the credits or because it was compulsory).

f. Lack confidence. Some students lacked the confidence to become involved.

g. Other interests. Students did not become involved because they had other activities that took precedence over studying (e.g. sport).

2. **Course-related.**

A particular aspect of the course discouraged involvement. For example,

'...not in Germ 211 which I gave up, because wasn't interested in what we were doing'.
'Because the lectures were not stimulating and at the wrong time of day (too late). Because the first half of the course were modules that I could not bring myself to do. I dislike such rigid 'pre-programmed ' forms of teaching'.

a. Course content. Responses were coded as course content when it was clear that lack of involvement was due to the student's reaction to the nature of the course content rather than a personal attitude to, or lack of interest in the subject matter (e.g. course content was boring).

b. Staff. This subset included a wide range of responses that referred to negative input by tutors and/or lecturers. Examples included poor lecturing,

or lack of interest by the staff member. Comments about assessment and marking are dealt with below.

c. Class size. Invariably responses coded in this subset referred to large classes which made it difficult for the student to become involved.

d. Class structure. This subset described various forms of class organisation. Usually this referred to overly formal tutorial structure or lack of opportunity for discussion.

e. Assessment. Students commented on assessment practices that either directly interfered with involvement or led to the development of a feeling that they did not want to become involved, for example poor (i.e. inconsistent or unfair) marking procedures.

RESULTS

Reasons for involvement

In contrast to the multi-category responses to the previous open ended questions (see Chapters 4, 5 and 6), students tended to perceive *either* course, personal or the achievement of objectives as significant reasons in determining their involvement (Table 7.2). First and second year students placed equal emphasis on course factors (41%). Personal reasons and objectives were of equivalent importance but less significant than course factors. Examination of the Personal+ and Course+ data reveals that second year students were more likely to include personal reasons in their answer than their first year colleagues. The pattern is reversed for the course related factors.

Within the personal category, involvement was most likely to result from cognitive input (e.g. interest in the subject area). Cognitive stimulation from the courses was a significant course-related factor (especially for YR 2 students 81.3%). The involvement of first year students was also influenced by the positive attitudes or presentation of staff (27.6%). Nearly one third (32%) of the sample included objectives in their

answer. These objectives tended to be quantitative (e.g. passing the course) rather than qualitative or personal. From this data it appears that existing interest or interest stimulated by the course is the most important factor in the development of involvement.

·Table 7.2 Reasons for involvement

	YR1		YR2	
	n	%	n	%
Categories				
Personal	8	17.4	6	19.3
Course	19	41.3	13	41.9
Objectives	9	19.6	6	19.4
Personal/Course	4	8.7	2	6.4
Course/Objective	6	13.0	2	6.4
Others	0	0	2	6.4
Total	46		31	
Personal+	12	26.1	10	32.2
Course+	29	63.0	16	51.6
Objectives+	15	32.6	10	32.3
Max error %		7.3		8.9

Subsets (calculated on total number in category)

Personal				
Positive affect	2	25.0	3	30.0
Cognitive input	9	75.0	7	70.0
Course				
Positive affect	5	17.2	2	12.5
Cognitive stimulation	17	58.6	13	81.3
Social	5	17.2	0	0
Staff	8	27.6	4	25.0
Major	2	6.8	1	6.2
Course organisation	4	13.8	0	0
Objectives				
Quantitative	8	53.3	6	60.0
Qualitative	3	20.0	3	30.0
Personal objectives	4	26.7	1	10.0

Reasons for lack of involvement

More than half the first and second year students gave personal reasons for non-involvement (Table 7.3). First year students referred mainly to negative affect, lack of interest or effort and perceived workload. Year two students limited their comments to lack of interest or workload with some reference to their negative reaction to compulsory courses. Interestingly second year students were slightly more likely to blame non-involvement on a combination of personal and course factors, suggesting that the more 'experienced' students are more aware of the interaction of factors affecting their experience.

Table 7.3 Lack of involvement

	YR1		YR2	
	n	%	n	%
Categories				
Personal	23	54.8	24	51.1
Course	13	31.0	14	29.8
Personal/Course	6	14.3	9	19.1
Total	42		47	
Personal+	29	69.0	33	70.2
Course+	19	45.2	23	48.9
Max error %		7.7		7.3

Subsets (% calculated on total number in category)

Personal				
Negative affect	6	20.7	5	15.1
Lack of interest	7	24.1	13	39.4
Lack of effort	6	20.7	4	12.1
Workload	8	27.6	15	45.4
Core course/credits	3	10.3	8	24.2
Lack confidence	1	3.4	1	3.0
Other interests	4	13.8	3	9.1
Course				
Course content	14	73.7	16	69.6
Staff	4	21.1	7	30.4
Class size	0	0	2	8.7
Class structure	2	10.5	1	4.3
Assessment	2	10.5	0	0

Subset analysis revealed that of the course-related factors, content was significant for both groups, with second year students seemingly more influenced by negative teaching and/or staff attitudes.

Discussion of reasons for and lack of involvement

Despite minor variations, the first and second year students in this study show a similar pattern of results. Course factors are important in stimulating involvement but when considering lack of involvement, students tend to blame themselves. Clearly interest is an important factor in the development of involvement. This may either be an existing interest in the field of learning or more specifically developed from the course content which is perceived as being interesting. Lack of interest featured predominantly in reasons for lack of involvement suggesting that positive and negative aspects of the same factors can operate to encourage or inhibit involvement.

First and second year students tended to give either personal or course related reasons with few individuals combining the two. One might conclude that students have a clear-cut view about reasons for involvement or its absence. The responses as given here do not suggest that they commonly see involvement as developing from a combination of personal and course-related factors.

Based on the assumption that students have a particular intention (as regards involvement) when they enrol in a course[3] a set of relations between course and personal factors are suggested (see Figure 7.1 for diagramatic representation of these relationships).

1. Students intend to become involved in a course (Positive personal intention P+). Their intention reflects existing interest, or a perception that involvement will help them obtain certain goals (e.g. understanding or better marks).

2. Students enrol in a course with neutral intentions concerning involvement (Neutral intention N). No particular interest exists but neither do any negative attitudes. An illustration is the student who enrols in a course because it is scheduled at a convenient time (e.g. after work)

3. The student is actively negative to the course (Negative personal intention P-). The intention is not to become involved. For example this may be because the course is compulsory and they have no interest in the field, or the student wishes to put time and energy into sporting activities.

The positive and negative intentions reflect the personal reasons given by the students for involvement and lack of involvement respectively. Once a student begins to study the course, the intention may be realised or it may change. At this point course-related factors become important in influencing the student's involvement. The diagram (Fig 7.1) illustrates the relationship between personal intention, course context and the various involvement outcomes. Based on open ended comments eight possible relationships are proposed.

1. The student brings a strong positive intention to become involved and does so with little or no reference to context. (P+)

2. As above, the student brings a positive intention. Involvement results from a combination of this and a positively perceived[4] course context (P+ C+).

3. The student initially has a neutral intention as regards involvement. S/he becomes involved as a result of a positive context (N C+).

4. Despite an intention not to become involved the student is influenced by a positive context (P- C+).

5. In this relationship the student's positive intention is changed as a result of a negative context and he/she does not become involved (P+ C-).

6. A student with a neutral intention experiences a negative context and is not involved (N C-).

Figure 7.1 The development of involvement: interaction of personal and course-related factors

1. Intention to become involved

2. Neutral intention

3. Intention not to become involved

Negative context

Positive context

Not Involved (P−, P+ C−, C−, P− C−)

Become involved (P+, P+ C+, C+, P− C+)[5]
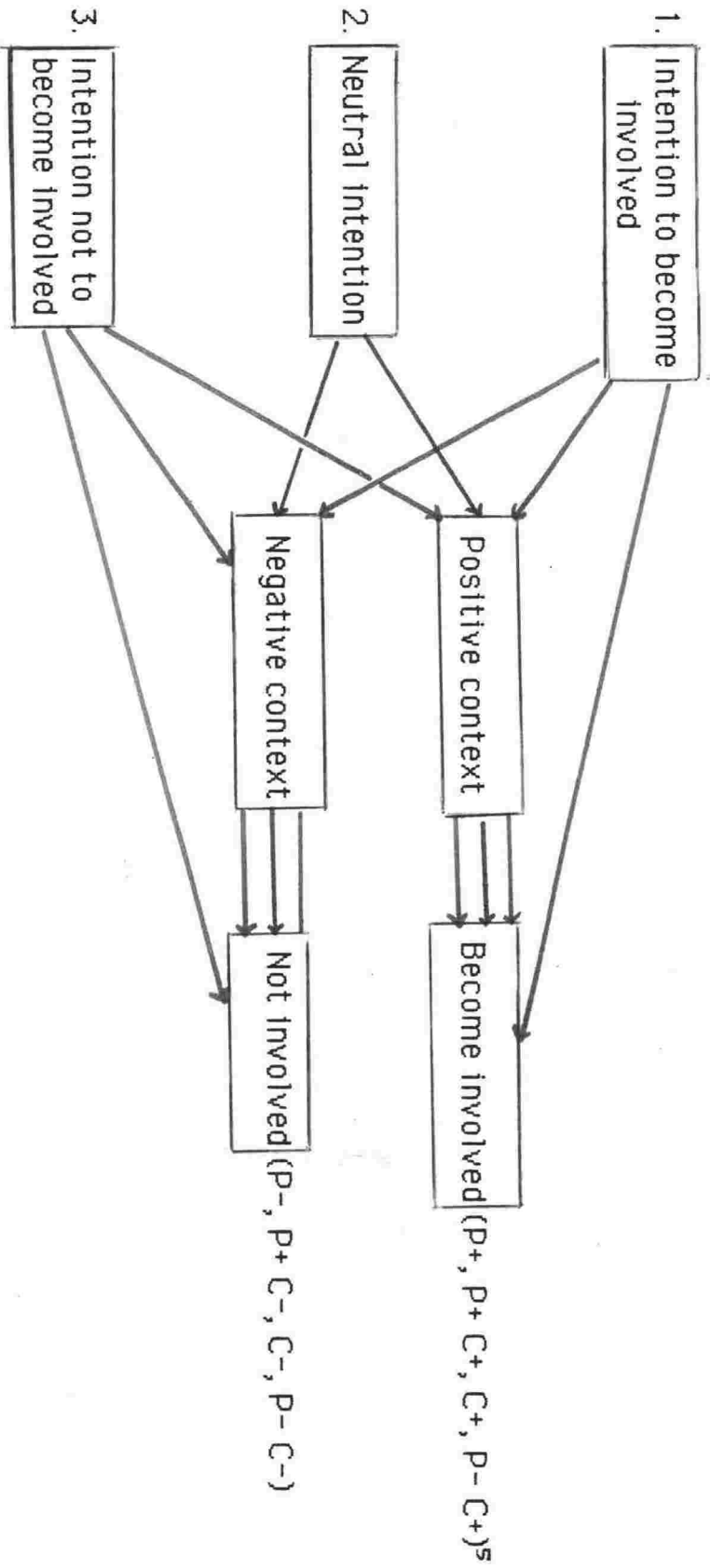
7. A negative personal intention and context combine resulting in no involvement (P- C-).

8. Lack of involvement results from a strong personal intention not to do so (P-).

Students with a very strong intention to become involved will be less likely to be influenced by negative course context and perhaps be more likely to perceive their context positively. Those with a neutral stance may become involved if they perceive the course context as positive. Individuals with a very strong negative intention towards involvement will be unlikely to become involved no matter how positive the context may be. The argument can be illustrated as follows: A student arrives at the first lecture of a course filled with enthusiasm and interest for the subject. She is keen to become exposed to a range of ideas. However the course contains over 350 students and is poorly presented by the lecturer. Her tutor does not take the time to get to know the students and marks the assignments in an inconsistent way. To make matters worse the student feels overloaded with work. The intention to become involved may remain but this student's involvement activity is likely to be reduced by the negative course context. Further discussion of these relationships with reference to the interviews follows in the next section.

INTERVIEWS

REASONS FOR INVOLVEMENT AND NON INVOLVEMENT

In the interviews, students (involved and not involved) talked extensively about the reasons for their involvement or lack of it. The most notable features of this material are the variations between courses and the finding that reason given was not influenced by approach to study. Generalisations about involvement are difficult to make given the strong influence course context has on student response.

As with the open ended data, the reasons given for involvement and non-involvement operate in reverse (e.g. interest and lack of interest) and are therefore combined in the following discussion. Student interest was the most frequently mentioned reason for involvement but other factors included positive affect and a range of course-related factors such as staff attitude, nature of assessment, provision for self-direction, relevance of subject material and class size. These are discussed below in terms of their effect on the development of involvement. It is important to note that in the interviews students did perceive there to be an interaction between course and personal factors. This is in contrast to the separation of these factors in the open ended question and demonstrates the importance of discussing involvement and related issues in depth with students[6].

Table 7.4 Reasons for involvement by level of involvement and approach to learning[7]

Full Involvement

Reasons for involvement	Approach to learning		
	Deep	Surface	Combination
personal	2	1	1
course	2	4	3
personal/course	14	7	5

Limited involvement

Reasons for involvement			
personal	0	0	0
course	0	3	2
personal/course	1	4	1
Total	19	19	12

Table 7.4 shows that fully involved students regardless of their approach to study, were more likely to perceive involvement to result from

a combination of personal and course-related factors. However, the pattern was more marked for fully involved students using a deep approach. There is tentative support[8] for Biggs' (1985) argument that 'surface' students are more likely to be affected by contextual factors than those using a deep approach. In the present study 31.5% of 'surface' students indicated that involvement was solely the result of course factors whereas 10.5% of students using a deep approach did so. A small number of students indicated that personal factors were the only reason for involvement (n=4). It is interesting to note that all these students were fully involved in their studies.

Personal reasons

1. Interest.

Of all the personal factors mentioned, interest was by far the most influential in determining student involvement (n=37).

Ruth combined interest and positive affect.

'...was the best course I've ever done. It was really really good. I enjoyed it absolutely. It was the one I got the 'A', but that's what I've chosen to major in and so I was really pleased that it turned out to be as good as that...just was so interesting, reading about all these things I'd been interested in for years and years and years. It was really good'.

Simon not only did more work when interested but he also was more likely to engage in some deep level processing. *'If you are interested in something you don't mind reading over the page or something or thinking - see if I can work that one out'.*

For Philip even limited involvement was absent when he lacked interest

'I suppose the ones I am interested I try and do the reading - prepare the tuts but ones I'm not - a waste of time really'.

From the comments made in interviews and open ended questions it appears that intrinsic motivation (as demonstrated by interest) is

important in stimulating involvement. However, intrinsic motivation is not the only reason why students become involved in their study, as the following results show.

2. Positive affect

For some students (n=3) involvement developed from the positive feelings they had about what they were doing. As Ian said, *'It's just a general feeling of neatness, the subject is really good'*. On the other hand *'I don't get involved because I don't like it'*(Maths). Rita commented *'I think* (in) *GEOG I've participated fully. I actually enjoy GEOG more than Economics...I think if you enjoy a thing you just love getting into it and learning'*.

3. Workload.

Workload is defined as a personal factor in acknowledgement of the variation between individuals in terms of what they consider to be acceptable or overly heavy workload. Svensson (1977) suggested that perceptions of workload were influenced by a student's approach; so that students using a deep approach found the work interesting and therefore were prepared to spend more time than a student learning by rote. Students also differ in the actual amount of time they spend on one assignment as illustrated by Brent and Dennis. Both students were studying the same Accounting course and referred to the time taken to complete weekly assignments. Dennis commented *'even though only one page long you can spend about three or four hours doing them because you've got to chase through all his notes and see what he's done and try and work it all out'*. Brent complained of the heavy workload in this course. *'We seem to have done about a year's work already, workload is pretty heavy...they take most of my friends about 5 or 6 hours to do each assignment'*. Clearly Dennis is likely to have more time available to work on other things[9].

As a specific reason for the presence or absence of involvement workload was mentioned by three students in the interviews. Clare felt her involvement was constrained by workload *'I found I just don't have time to do anything well really...they don't give enough time to sit back and think, it's always pressure'.*

Sally's comments illustrate the difficulty of memorising large quantities of information.

'I'm a bit concerned about doing too much extra reading cos I'll end up with voluminous notes which I can't really get through and end up probably getting a bit confused whereas if I keep to what they've given us it's a bit more straight forward, cos you can only remember a certain amount in exams'.

As Novak (1977) argued, a reproductive approach is not effective when large quantities of information are involved nor is it as satisfying as a deep approach (Svensson, 1977).

In contrast Hamish initially attributed lack of involvement to his light load, although things had been different in the first year.

'I really got into that and ...really did lots of work, this year I've gone down to 36 credits that's the maximum we are allowed to do and its been quite a let down for me. I've found that about half of the course is very wishy washy, the other half I can get my teeth into like Physics and Maths...people complain about the workload but as far as I'm concerned it's not the only reason I'm getting really tired and run down is the fact that I'm not at all interested and in order to make myself do something the only way I can do it is by making sure I'm under pressure'.

However, elaboration by Hamish actually suggests that lack of involvement is due to lack of interest rather than workload[10].

4. Own responsibility

This factor was not given by students as a reason for involvement but rather illustrates the role of the individual in the development of involvement (n=4).

For example Julia commented.

'I think it has got to come from me but where you've got a situation where you've got a tutor who you enjoy being there and who does direct it well. This can be added stimulus but for me it has to come from me first'.

Anita also emphasised personal factors in addition to a small contribution by the lecturer.

'it would have to be partly the subject itself whether it appeals to you or not - not sure about the lecturer because to a certain extent his lectures aren't all that good they are understandable because they follow a very logical pattern'.

Ian had been interested in psychology before enrolment (he came up to discuss psychology with the researcher after completing Q1). His comments illustrate the interaction between personal factors and course context - in this case the dynamism of the lecturer. *'I really like personality theory and individual and social psych. I really got into that it was really neat...Prof_ was the really dynamic one and he really developed an interest'.*

The interview results reinforce the findings of the open ended question analysis which demonstrated the key role of interest in the development of involvement or non-involvement. The minor role of positive affect as a reason for involvement suggests that feelings about a course are in fact part of a student's actual experience of involvement (or non-involvement) and do not contribute significantly to its development.

Course reasons

The interview data demonstrated that for the majority of students (58%), context and personal factors were in fact related. For example involvement was the result of increased interest in the subject, aroused in the first place by the enthusiasm of the lecturer.

1. Staff attitude and presentation

Of the many contextual factors mentioned, staff and their attitudes to their subject and to students was the most frequent (n=35).

a. Lecturers

For Oscar, involvement was the result of feeling that his views were valued by staff.

'Some staff have a very clear distinction between people on their level and students...you are students and you are here to learn...you don't count until you can put those little letters after your name, but other staff are receptive to what you say and it makes all the difference'.

Emma responded positively to one lecturer.

'He just makes all the lectures so interesting even the most boring things be manages to bring to life. You can really tell he puts a lot of work into what he's doing and I notice more when I write essays for this course I always put a lot more research and time and thought into the essays I write'.

John made an interesting comparison between a course where he was not involved and another to which he was strongly committed.

'The lecturers are terrible...they can't use their voice even to get the point, they start off reading a sermon and that's why people loose interest so quickly...I've picked up an Architecture course this half and the atmosphere is so different. It's just fantastic...its so interesting and the attitude of the students and the lecturer too cos he's interested in it. Everyone gets involved you don't mind doing the work...you really want to get stuck in'.

In the following year John commented on the lecturers outside the Commerce faculty.

'You find those subjects (Architecture and Russian Literature) the lecturers are more interesting people and they make it more interesting cos my Architecture lecturer he was a laugh, they are prepared to stick their neck(s) out and criticise'.

The role of lecturers in the development of involvement appears to be to make the students more interested in their course and its content. This is achieved by demonstrating personal interest in and enthusiasm for what they are teaching as well as respecting students' ideas.

b. Tutors

Rita described her Geography tutor in positive terms.

'he's lovely.. and he sort of took a very casual aspect in the beginning of the year so you automatically relaxed and thought well it won't matter if I don't say anything...cos he'll understand'.

For Clare the tutor's personality was crucial in creating a relaxed climate in the tutorial group. *'She's much younger and she seems much more friendly and relaxed* (as compared to other tutors) *and I found it easier to talk, yes it's so dependent on the tutors personality. I think that openness is really important'.*

In contrast James commented *'she had me kind of scared because I didn't feel I could do anything right, I even tried quite hard'.*

Rachel enjoyed tutorials as they 'give you the chance to give an opinion rather than just taking something from the lecturer'. She contrasted 'good' and 'not so good' tutors.

'I find some tutors are a lot better than others...the ones I had last year were really good – let you really express your opinion. If you were wrong you weren't told that's not it. Some are more dogmatic than others. I think that puts you off if you are told you are wrong'.

In terms of encouraging involvement, the role of tutors is to create a climate where students feel able (even if they don't – in Rita's case) to participate in discussion.

2. Course content

Although not as important as staff in the development or absence of involvement, aspects of course content were mentioned by a number of

students (n=16). One aspect of 'course content' related specifically to relevance and the other included more general comments referring to the boring or interesting nature of material covered in students' courses.

Students referred to the importance of relevance in increasing their involvement (n=7). A distinction was made between relevance in terms of use for a future career and personal relevance. This related more to the reason a student was studying a course (i.e. vocational or general study) rather than approach to study.

Rob's comments about his Industrial Relations course illustrate work related relevance.

The course had *'been my saviour...it's much better, I can pick up a newspaper and relate to what you have learnt, to what they are saying and create your own opinion. Organisational behaviour you are just looking at the different systems and sort of theory. It'll never help you really'.*

Although relating the work to his own life Guy's main focus of attention was on his future career.

'You see how all these managers react and you do assignments in preparation for tutorials about industrial relations problems...You imagine yourself as the manager which is what we did for our major report and you made recommendations as you are a consultant to a manager saying what you reckon is wrong and how to fix it and gives you a good feeling to pretend that you are in an influencing situation'.

Paul gave personal relevance as a reason for his involvement comparing one course unfavourably with another.

'I'm doing Geography of the Pacific Basin. I took it because I lived in the Pacific for a while and we've only just started getting on to the South Pacific which is relevant to me and that's the only part I've found interesting...Economics doesn't relate at all.. I find I keep asking myself what's the use of that, that's why I don't bother copying it down'.

Students also commented on their perceptions of course content. For some it was boring or simplistic and acted to reduce existing interest in the field. For example, Clare commented. *'I took it because I was interested in it...it's too easy, too simplistic. It could be really interesting'*. Ian remarked.*'I was just bored with the subject'.*
Jane found the content had a positive effect on her involvement. *'I find history interesting. There's always focal points you can focus on like who was a king over a certain period'.* Ben was even more positive. *'Totally different - I've never done anything like that before so that was interesting...It was also good that it wasn't just looking for theory behind'.*

3. Class size/impersonality

It was not unexpected to learn that students (n=7) found that large classes hindered their involvement while small classes encouraged them to become more involved.

James compared his History classes to those in the Commerce faculty. *'It's quite a close-knit little group almost down to first name basis, there's only about 30-40 of us. It's quite a different approach from the BCA subjects'.*

Jack felt alientated by the impersonality of the staff *'you are just a number...sort of like a stock car you get bunted and pushed around'.*

Julia compared her university experience unfavourably with that in school.

'With Geography and English and Biology (school), the classes were quite small and involvement was very, very easy it didn't worry me at all in terms of planning and in terms of discussing...here 300 students in a lecture I'll never think of discussing'.

4. Nature of assessment

Six students referred to assessment as affecting their involvement. In general, assessment tended to reduce involvement as Clare remarked.

'I think I thought it would be a more stimulating place than it is. It seems well and truly oriented to marks and grades and the exam'.

Similarly Beth was critical of the influence of assessment on the quality of her learning.

'I've found exams are very limiting because you might cover a whole lot of things in the course..but when it comes to the exams you've learnt whatever you can and then you just have only say 45 minutes or something to write whatever..I find that really futile...most fully internally assessed (courses) are much more concerned with not so much the topic but just sort of giving you the experience of looking into what you want to and helping you to develop your interests'.

On the other hand Oscar felt constrained by internal assessment.

'I don't feel that internal assessment – total internal assessment where everything does count no matter what happens is totally a good learning tool because I think you've got to be able to make mistakes...to learn and there is a disincentive to try or experiment when you know that work has to count towards the grade at the end of the year'.

Involvement is consistent with a situation where students can make mistakes without it affecting their grades or feeling that assessment dominates and directs their learning.

One negative aspect of assessment (in terms of its effect on involvement) was a perception by three students that marking was inconsistent. Jack illustrates this point as follows:

'My marks have been lower than they should have been. I got 41% for the last one (Economics essay) which was pretty unfortunate...especially as my friend does ECON as well and we went through what had to be written...we didn't write them word

for word but his wasn't too different from mine and he's got a different tutor. He got 70 for his and I got 41 for mine. I was a bit upset so I went and saw the course coordinator about it and he said he didn't want to interfere with my mark because...they take the average of each tutorial and align them...that doesn't allow for my tutor marking me very badly in relation to the rest of the tutorial'.

5. Other students

For a few students (n=2), peers were more significant in the development of involvement than were staff. For example Tessa felt that

'In a way your class mates help you more...than the actual lecturers because being able to compare yourself with other people of how you are getting along and coping with the same things'.

Fiona believed that the attitudes of other students were one element in determining whether a course was good or not.

'Well for a start you've got to enjoy the works (literature) *that you are doing, if you are doing a course where you don't actually like the set works then you are bound to find it more boring and also I think if the lecturer doesn't appear to like them* (laughs), *if you've got an energetic tutor and people who bother to go to tutorials it's going to be a good course'.*

6. Provision for self direction/depth

Clearly this factor is related to students' own style of working. Its inclusion as a course-related factor reflects the emphasis students placed on the course for providing stimulating content and scope for independent study (n=3). Involvement appeared to be more likely to develop in a situation where students were given scope to develop their own interests and engage in indepth study. For example Prue had been disappointed in her English course, remarking that four lectures on an author *'doesn't allow you to get into sufficient depth that it needs to really get the best out of it'.*

James was involved in his History course, chosen because of interest in comparison with his vocational Commerce programme.

'I would say History is much more aimed at learning stuff individually rather than BCA certainly have to conform fairly strongly..I find it hard to go out and do anything original (in BCA) *you can only go and look up a certain number of text books and only crunching numbers or juggling a few concepts...I suppose you could extend that to History that you are still going over the same old facts* (laughs) *but there the reading matter is so wide and varied and everyone can made a different interpretation you can put your own amount of input into it'.*

Sandra made an interesting distinction between courses where she wanted to be self-directed and those where a structured approach was the preferred mode of study. In courses that interested her, Sandra wanted them to *'let you choose your own topic - essay topics, discussion topics and also what you would like the lecturer to lecture on'.* She went on to make the following comparison.

'They actually let you choose our own topic - essay topic, discussion topics and also what you would like the lecturer to lecture on and I found I prefer that to the more structured courses. I think only because I'm more interested in that area I don't think I'd want to go off and do ACCY or anything like that'.

Stephen said. *'I quite like doing my own thing. They don't tell you exactly what to look up or anything and for the essays you just pick a topic that interested you during the year and do your own research on that'.*

In the present study, students clearly perceive self direction as a reason to become involved rather than as part of a definition of involvement as suggested by Adams (1979). However Adams does relate self-direction to the experiential aspects of involvement which is consistent with the findings presented here. It appears that opportunities for independent

learning may contribute to a learning climate that is conducive to the development of involvement.

7. Performance

A feeling of achievement was important in the development of involvement for one student. For Grant involvement was related to *'whether I am enjoying the subject at the time, whether I think I'm doing any good in it'.*

8. Additional reasons for lack of involvement

While degree structure and competition between students were infrequently mentioned as specifically limiting involvement, they were mentioned in more general terms by the commerce students as detrimentally affecting their general learning experience.

Peter's comments illustrate the restriction imposed by degree requirements. His involvement in Maths was limited by that subject's non inclusion in the Commerce programme. (I couldn't) *'do BCA in Maths so I'm taking INFO to stage three...stuck with all these things I don't want to do...it's a pain but I'm stuck with that for life - can't choose everything'.*

Roger found competition between students a constraining factor,

> *'last year since the competition was so high you didn't really speak to other people. You didn't want to give anything away unless they were your quite good friends. In this third term people are starting to be a lot more open with other people and tell them what their ideas are which is really good'.*

Relationship between intention, perception of context and involvement

The interview material provided support for the relationships proposed in Figure 7.1, although the role of context was given greater emphasis in the sense that few students (n=3) were able to sustain their involvement within a negative context and only one student ascribed lack of

involvement to a negative personal intention in isolation from the influence of the course context.

Students illustrated all the conditions specified above (Figure 7.1) although the majority of involved individuals combined existing interest with positive contextual factors. It is important here to consider the possibility that students with a strong interest in the subject are more likely to perceive the context as positive (e.g. finding the lecturer interesting). In contrast, students with a negative intention may form negative perceptions of the same context. To satisfactorily examine this point, further examination of involved and non-involved students enrolled in the same course would be needed. Interview results indicated the existence of an additional category in which a combination of a positive intention and negative course factors resulted in the development of involvement in addition to the outcome proposed above (i.e. no involvement) (Figure 7.2).

It should be noted that the concept of involvement as used here, is based on student perception of involvement in a course and includes limited and full involvement. Furthermore the diagram describes the situation on a course by course basis. For example, for any student, involvement could result from different combinations of personal and contextual factors in each course they study[11].

The identification of a context as positive or negative was mostly clear cut. However some students (n=6) described elements of context that were both positive and negative. As the following quotes indicate students perceived one element as more important than the others. This element acted to direct the development of involvement.

In one course Jason became involved despite the fact that the lecturer was *'not a very interesting lecturer...I don't really mind if the lecturer is really boring - put up with that as long as the material itself is OK'.*

Anita commented. *'It would have to be the subject itself whether it appeals to you or not - not sure about the lecturer because to a certain extent his lectures aren't all that good'.*

Each of the elements is discussed below and identified with quotes from the interviews.

1. Positive intention and involvement (P+) (n=7)

In this case the student does not make any reference to contextual factors. Involvement arises completely from the student's desire to become involved as illustrated by Tessa and Ruth.

Tessa believed that her involvement was due *'more to the fact that it usually captures my interest therefore I prefer to actually do a proper job not only sort of half effort towards understanding'.*

Ruth had a general enthusiasm for learning.

'I really do like learning. I like learning about things that interest me...It's just such a terrific opportunity to do it...I think I could find something of interest in any course...I've never really done a course that I thought was bad'.

2. Positive intention and positive context and involvement (P+ C+) (n=31)

The students perceived their involvement to have developed from a combination of personal and positive course factors. It seems likely that the student will become fully involved in this situation.

Beth *'feeling interested and satisfied with a course programme'.*

Rachel had chosen Arts subjects because she found them *'interesting and relevant...I do it* (learning) *for interest'.* For Rachel involvement was directly affected by her perception of the context. The following quote illustrates two of the suggested relationships (i.e. P+ C+ and P+ C- resulting in no involvement).

'The material we did in English I really enjoyed immensly...the course was so well organised and because the lecturers were so helpful too...I also think you get a lot more involved in anything if you have a choice rather than you are forced to do something. Just take the French Department with their assessment you are just given certain pieces of work and they bear no relevance...to the subjects - the themes. I think it really makes you feel a big distance. You don't feel involved at all. You just churn it out for them - get your marks and that's it. I don't think that's very good for morale'.

3. Positive intention - negative context and involvement (P+ C-) (n=3)

This relationship is an interesting one and not predicted by the open ended question responses. In this case a student becomes involved despite negative course factors. However, if the negative factors include workload the student's involvement may be limited.

Beth *'in some of the courses it's a bit harder to get to know other people if you only have one tutorial a week and you don't see them apart from that...* (lecturers) *haven't been particularly enthusiastic...found the actual topics quite interesting'.*

Oscar enrolled in his courses through interest. His involvement in Economics was demonstrated inspite of a negative course context.

'Some (Economics) *lecturers come in disorganised. Their presentation is muddly. They don't get through what they intend to get through...I think when you look through the prospectus at courses to take. next year you are very interested in who is taking the course...it is as important, in some cases more important than the actual subject material...I think there is an indifference by many staff. I don't think in all cases a conscious indifference rather pressure of work'.*

The interview results have suggested that two separate involvement outcomes are possible from the same combination of personal and contextual variables (i. e. P+ C-). In the case outlined above, the strength of personal intention to become involved appears to be sufficient to overcome the influence of a negative context.

Figure 7.2 The development of involvement: interaction of personal and course related factors – findings from interview data

1. Intention to become involved

2. Neutral intention

3. Intention not to become involved

Negative context

Positive context

Not involved (P+ C−, C−, P− C−)

Become involved (P+, P+ C+, C+, P− C+, P+ C−)

additional relationship − − − − →
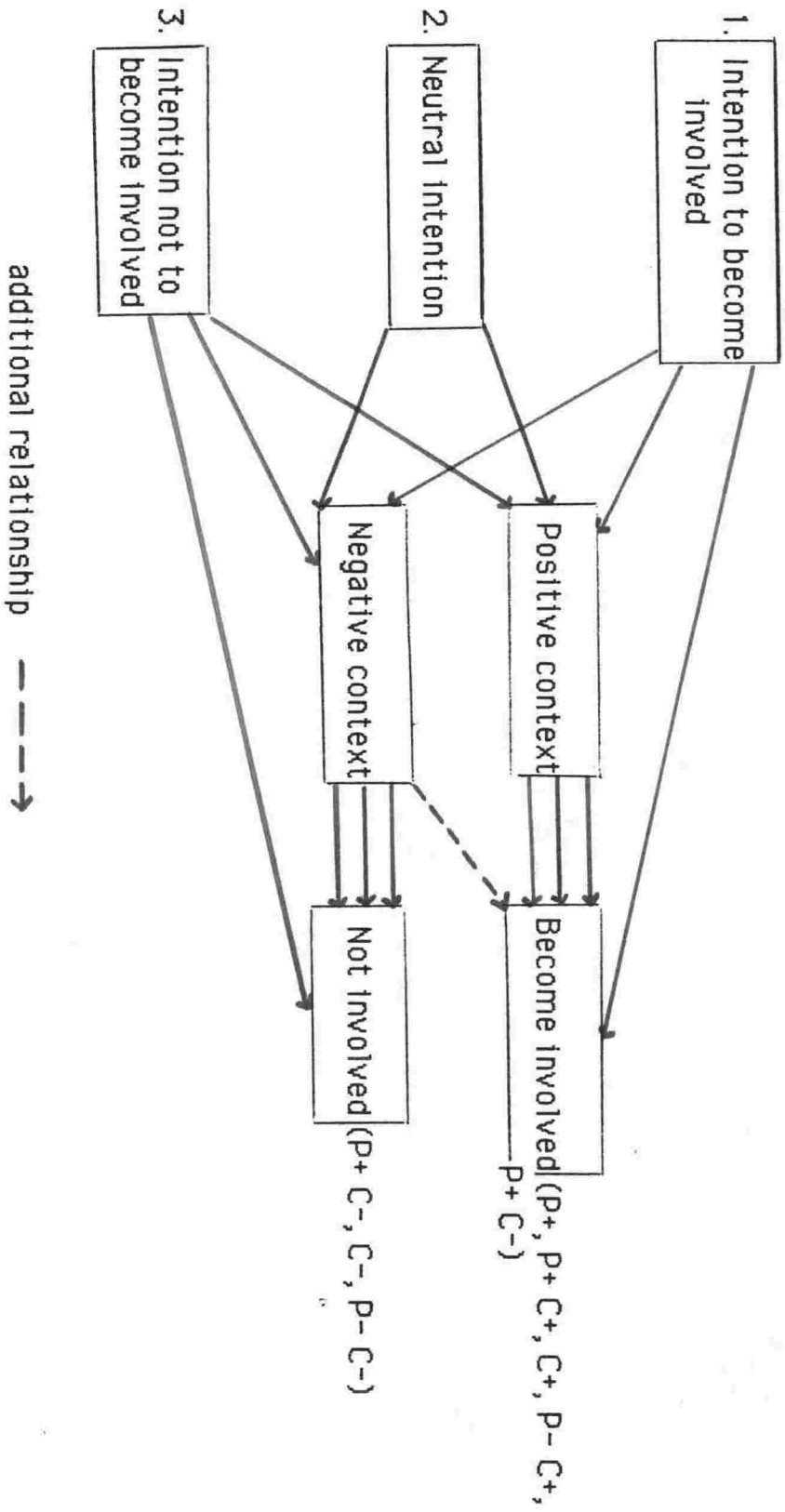
4. Neutral intention - positive context and involvement (N C+) (n=17)

The student enrols in a course with a neutral attitude to the subject. It may be a required course, or it may be scheduled at a convenient time. As the result of the course context the student becomes involved.

George did not posess an particular interest for Economics or Business Administration. His involvement

'depends a lot on the different courses. I find (involvement in) *BUAD is contributing through the group discussion...the tutorials are quite helpful. You feel you are working together with others to reach a certain goal...ECON at times it's very interesting. I find in 101 I quite enjoy parts of it. Quite interesting cos it relates somehow'.*

James was also neutral in his intention towards involvement. *'ECON pure maths I actually found quite interesting...a bit of a surprise'.*

5. Negative intention - positive context and involvement (P- C+) (n=2)

The student does not want to become involved in the course but despite this view becomes involved as the result of the course. It may be that limited rather than full involvement is likely in this case although Sarah (see quote) was certainly fully involved.

'I hate poetry and I went in there thinking Ugh, and now I love it...a big factor is the enthusiasm of the person taking it. I think it has a tremendous amount to do with your enjoyment of the couse. That modern poetry..I told one of my friends...it's marvellous you've got to do it...She has got_ as her tutor and he's lecturing a lot more. I had one lecture with him and I just about went to sleep and she just loathes the course. She said I obviously enjoyed it so much and she thought it must be better than he's making it out to be'.

6. Positive intention – negative context and no involvement (P+ C-) (n=17)

Unfortunately, despite a desire to become involved as expressed by personal factors such as interest or enjoyment of the subject, negative perception of the context had resulted in no involvement (e.g. Rachel's comments above).

Bruce clearly felt frustrated by this situation '*I've got ideas running round in my head which is good but I sort of don't have a medium to express them, the assignments don't allow for it and I keep them all trapped up inside me*'.

Jason had decided not to progress in a course largely because of class size.

'*I was thinking of going into Physics quite deeply but for some reason last year Physics put me off entirely even though I got an 'A' in it...since the courses were very full and large you wouldn't get the personal attention*'.

7. Neutral intention – negative context and no involvement (N C-) (n=24)

In contrast to a previous example the student does not percieve the course in positive terms and is therefore not involved.

Stephen's neutral intention can be expressed thus, '*I wouldn't say I'm enjoying what I'm doing ...I like university, I don't really want to work*'. Lack of involvement resulted from poor lecturing '*he just reads it out for the whole term, just about nobody took any notes or anything and hasn't read it up*'.

8. Negative intention – negative context and no involvement (P- C-) (n=6)

Non-involvement was the result of the combined effect of a negative intention and perceived negative course context.

Hamish expressed this combination of factors as follows:

'At the moment I'm just not really interested in architecture...really it s.eems meaningless stuff...as far as I'm concerned I never had an incredible amount of imagination, I've got none left now, its been totally demolished'.

9. Negative intention and no involvement (P-) (n=1)

This relationship of factors was suggested above, however only one of the interview students perceived their non-involvement to be totally due to a negative intention. It was interesting to note that none of the non-involved students fell into this category. In all these cases, non-involvement was due to either negative course factors or a combination of personal and course factors which further emphasises the role of staff in the development of student involvement.

Fred was compelled to study a Maths course in order to complete a degree in Geophysics. Mathematics was an area where he perceived he possessed little aptitude and no interest (his repeated failure of this course forced him to change the emphasis of his degree).

'Maths doesn't appeal to me. I didn't put any work into it'.

A modified version of the diagram of relationships between personal and contextual factors is presented in Figure 7.2 which takes account of the interview results. Comments relating to the development of involvement have demonstrated the importance of emphasising that the relationships reflect academic involvement at one point in time as changes in personal intention and/or context may influence level and nature of involvement at any future time and across a range of courses. The results clearly indicate the important role perception of context plays in the development of student involvement. Few students stated that involvement developed either solely from personal commitment or in spite of a negative context. However personal factors should not be ignored as two students became involved as the result of a positive context despite a negative personal intention. Involvement is more likely to develop if students feel positive about what

they are studying and want to become involved and they perceive the context as positive. There is no evidence from this data to suggest that students with a positive intention are more likely to describe a context in positive terms[12]. What is demonstrated is that few students enter a course with a clearly negative intention.

Maintenance and change

This section is concerned with the identification of personal and contextual factors that are influential in involvement changes and provides an exploration of the relationship between involvement and more general changes in student learning experience.

Twenty seven students identified a range of personal and contextual factors as significant in involvement change. They are similar to those mentioned above; however, in this case students perceived them to be crucial in change although clearly there is considerable overlap between factors that affect initial development and change.

1. Staff changes

Not only were staff crucial in the development of involvement but according to seven students, they also played a role in involvement changes. Prue compared two tutors.

'The tutor we had in the first half of the year, she would sit there and do all the talking and tell us what she thought about it. I think I must have spoken in tutorials about once but we've got a different tutor this half of the year. The tutorials are less structured. You might come away with less notes but you spend more time talking'.

2. Changes in relevance

In five cases reduction or increases in perceived relevance were important factors in changes in involvement. For example, Ann reduced her involvement.

'I'm not enjoying so much any more...the way they are presenting it now is slightly different, it's more theory...it seemed relevant because we knew what they were-like we were doing James Smith and DIC and it helped a lot there and analysing small businesses and I know they were real'.

Ann's comments illustrate again the relation between personal factors and those in the course as her enjoyment is reduced by increases in the amount of theory in the course.

3. Changes in perceived workload

Four students believed that the time they had available for involvement had been reduced by the increases in the amount of work required. Only one individual (Helen) described a decrease in perceived load.

'I was terrible last year. I had so much else to do, didn't read so I didn't say anything in tutorials expect what I thought was quite appropriate which I made up. That didn't work very well'.

4. Content changes and requirements

For some students (n=4) involvement became perceived as essential. For example Prue described changes in the requirements of her courses.

'You've got to know the work at a more in depth level it requires more. You don't just learn it and know it you've got to make conclusions from it...in stage one - just learn it off and parrot it out but (at 200 level) *you have to form your own ideas about things...ZOOL isn't as advanced as that, its still more or less rote learning which is a bit more boring'.*

5. Familiarity with other students

Once the feeling of isolation had worn off some students (n=4) were likely to want to become involved. Initially Sally

'was quite disillusioned when I first started - sort of golden dreams of university. Realising it was a concrete mass with normal people in it but once you get to know people and get into some of the subjects - like I've really enjoyed English just a real joy in it sometimes. I look at all these books and I think Oh how wonderful'!

A similar point was expressed by Prue.

'I'm enjoying it much more this year, we have very small clases for stage 2...and there's more personal approach. We've got to know the lecturers and the teaching staff a lot better `- I hated university last year but this year I didn't like it much either but as I've gone on even my attitudes are changing to it or adapting'.

A key factor affecting this student's changes in attitude is a reduction in class size which contributed to a more personal class climate.

6. Increased specialisation or focus

The generalised approach taken in many first year courses was not always conducive to the development of involvement. Four students responded with increased involvement once they began to study more specialised course material.

Emma described the distinction. *'It's* (EDUC 100) *all theories they give you one thing and then another thing and come away not really knowing anything...It's* (CLASSICS 200) *work in more depth really..I can easily get involved in the Classics'.*

7. Self-direction

A factor that seemed important in involvement change (n=3) was changes to level of self-direction. For Rajiv

'the reason I'm doing it (lab work) *is because I want to pass the course...in the first half* (of the year) *the contrast was enormous...they just said if you want to muck around go ahead feel free do the experiment if you've got time just play around with the laser...sprinkle chalk dust in the beam and see what the beam looks like. This second half* (year course) *do that, once you've done that don't muck around'. In the earlier course he had been able to ask questions 'how come it works this way or why does this particle give off so many different rays. I think I learnt more that way'.*

8. Attitude changes

Following completion of the core/required courses two students noticed a difference in student attitude. Ann expressed this point as

follows. *'Everybody seems more intent on working...it's what we want to do rather than what we have to do...it makes a difference in the attitude really the way they* (students) *react to lectures'.*

9. Course length

Initial enthusiasm dimmed if the course did not live up to initial expectations and/or was seen as unnecessarily long as illustrated by Lucy.

'I've found I'm getting a bit disappointed with the ASIA (course) *it started off very interesting and things dragged out now'.*

10. Different outcome sought

Two students had changed their personal objectives making involvement necessary if they were to be achieved.

Tessa commented that last year

'I wouldn't look at anything beyond what was just enough to get through and this year with the subjects I'm doing a bit more and actually making sure I understand it before I try to do any work...it usually...captures my interest therefore I prefer to actually do a proper job not sort of half effort towards understanding it. I like to understand the whole thing'.

For those students who noted changes in their involvement, the role of context is of key importance. The nature of content in terms of its relevance or specialisation was mentioned, as was the role of staff in creating or destroying a climate suitable for involvement. It is interesting to note that for some students, increased opportunities for self-directed learning were of significance. Contrasting this with the effect increases in perceived workload appears to have, involvement appears likely to florish in a situation where students are given time to reflect on their learning and pursue personal interests.

Changes in approach and attitude to learning

In the second interview, students were asked to comment on changes they had experienced both in terms of their approach to learning and

personal attitudes to university study. Significant points of change were identified and recorded for each student. The following discussion relates these changes to students' level of involvement and approach to learning.

As can be seen from Table 7.5, individual students often recorded more than one significant area of change (e.g. a move to independent study and increased vocational orientation). Numbers in each cell are small and therefore this data should be viewed as exploratory. Nevertheless some interesting patterns of response can be seen. Students who demonstrated full involvement appear more likely to comment on moves to increased independence – regardless of their approach to learning. If one focuses on students adopting a predominantly surface approach one can see that the proportion of students who continue to display a passive approach is greater for those who are not involved. This suggests that students who become involved are more likely to move to a more active approach to learning. On a more pessimistic note, a trend emerged which indicates that the enthusiasm of the fully involved 'deep approach' students may reduce during their course of study. Eight of these individuals made a least one negative comment. Themes which emerged include: increased disillusionment with university study and/or a desire to leave, increased concern with grades and competition between students and increased levels of extrinsic motivation. Such extrinsic concerns are not unexpected given that students are becoming more aware of the necessity to make career plans – a concern that may be tinged with anxiety for students completing more general arts degrees in a shrinking job market. It is unfortuntate that such changes appear to be in conjunction with no evidence of movement to a deep approach, increased interest or enjoyment of learning.

Table 7.5 Changes in learning experience, level of involvement and approach to learning.

	Deep			Surface			Combined		
	F	L	N	F	L	N	F	L	N
No change									
passive	-	-	-	5	4	3	-	-	-
extrinsic motiv.	-	-	1	3	2	-	2	-	1
not yet independent	1	-	-	-	1	-	-	-	-
Change									
move to deep l.	1	-	-	1	-	-	2	-	-
more independent	7	1	1	5	2	1	3	1	-
more interested	-	-	-	1	-	-	2	-	-
specific focus	1	-	-	-	1	-	-	-	-
more enjoyment	-	-	-	1	-	-	-	-	-
more organised	1	-	-	1	-	-	-	-	-
more work/time	-	-	1	1	4	1	-	-	2
personal/intellectual development	-	1	-	1	-	1	-	-	-
more passive	1	-	-	-	-	-	-	-	-
less interested	-	-	-	-	-	-	1	-	-
more competitive/ marks	2	1	-	-	-	-	2	-	-
increased extrinsic motivation	4	-	-	-	-	-	-	-	-
disillusioned/ wants to leave	3	-	-	2	1	1	-	1	-
Number of students[13]	13	1	1	11	7	4	7	2	2

The header "Approach to learning" spans Deep, Surface, Combined; "Level of involvement" spans F L N columns.

CONCLUSION

A range of factors are influential in the development of involvement, the most important of which is interest which may exist before a student enrols in a course or be stimulated by the course context. For a student to become fully involved (with a few exceptions), the course context is crucial as interest may wither without the support of teachers and provision of appropriate types of tasks (e.g. self-directed). Thus involvement is the responsibility of both staff and students.

A number of relationships were proposed which demonstrate that each student combines personal and course factors in a unique way. From this data it is difficult to determine whether students with a positive intention are more likely to perceive their context more positively than might someone with a negative involvement intention because there was no evidence to illuminate the question. A point of interest was the finding that the combination of a positive intention and negative course context could lead to very different involvement outcomes (i.e. involvement or non-involvement). It is the relative strength of personal and course factors seems significant here.

Change in involvement (either increases or decreases) are similarly influenced by a range of contextual factors such as changes in course relevance, staff changes and differences in opportunity for self-directed learning. Personal factors were of less significance although changes in personal goals were important for some students as a reason for involvement change. These results have demonstrated that the development and maintenance of involvement appears to be consistent with a learning climate where the learner brings a positive intention to the course and encounters a context that they *perceive* to be conducive to the development of involvement. However, for those students with a neutral involvement intention, a postive context is often sufficient to result in academic involvement.

When students were asked to comment on general changes in approach and experience of university, it was possible to identify a number of individuals who moved from a position where they enjoyed studying to one of increased disillusionment and/or extrinsic motivation. These preliminary findings support those gained by Watkins (1985) who found that contrary to expectations, students did not move to a deeper approach during their university study. It seems clear that if students are to be encouraged

to employ deep approaches to learning, assessment requirements must reflect such an approach. This applies to all students regardless of approach as illustrated by the high level of cue awareness observed in all students and moves to extrinsic motivation expressed by those with a deep approach.

NOTES

1. The percentages do not total 100 as the calculation includes students who gave reasons for involvement *and* non-involvement.

2. The category 'objectives' did not emerge from the data. While some students perceived that involvement would assist them in achieving particular objectives, reasons given for non involvement did not have such associations and reflected a response to a particular course rather than a planned strategy.

3. Based on student comments (in the questionnaire and interview) this referred to whether they wanted to become involved or not. The reasons given for involvement (or its absence) underlie this intention (e.g. a student may be very interested in English Language and therefore want to become involved in the study of that subject).

4. Perception of course context is subjective and made by each student as a personal reaction to factors such as teaching style and assessment requirements.

5. Involvement is defined in active terms and although some students possessed a neutral intention, involvement as a learning activity was either present (in varying levels) or it was absent.

6. The open ended questions provided a forum for a student to respond quickly; giving the most important reason for involvement or non involvement. The questionnaire was unfortunately timed to coincide with preparation for mid-year exams which may have resulted in hasty responses. The interview provided an opportunity for reflection and elaboration.

7. The eight non-involved students are excluded from this analysis.

8. The conclusions are tentative given the small sample size.

9. This assumes of course that students spend equivalent amounts of time on their study.

10. The comments made by Hamish were coded as 'lack of interest' rather than 'workload'.

11. The figures given in this section should be seen as guidelines only. The data presented here is based on the courses discussed in the interview and does not include everything studied but rather the range of relationships mentioned. Further research is needed to investigate the relative importance of each.

12. This conclusion is tentative until more detailed analysis is carried out on students studying the same course.

13. Ten students had to be omitted from this analysis as they were not available for the second interview. Seven of these students transferred to another university or dropped out between the first and second interview, two could not be contacted and one refused to participate in a further interview.

CHAPTER 8

CONCLUSIONS AND IMPLICATIONS FOR TEACHING AND COURSE DESIGN

The final chapter of this thesis has four objectives. The first is to discuss the main findings of the research and the second is to use these results to examine the implications for university policy, teaching and course design. The final two sections of the chapter highlight areas for further research and identify problems that need to be overcome if such research is to be successful.

DISCUSSION OF THE FINDINGS

The discussion presented in the previous four chapters has focused specifically on the aims of the study as stated in Chapter 2. The purpose of this section is not to repeat this work but to draw out significant and interesting findings from the results presented earlier. This section discusses the results as they relate to the following questions:

1. What does 'involvement in study' mean to university students?

2. Who becomes involved in study?

3. Why do students become involved in study?

4. Why is involvement important for learning?

Each of the above four questions will now be examined

1. WHAT DOES INVOLVEMENT IN STUDY MEAN TO UNIVERSITY STUDENTS?

It became clear from the analysis of the interview transcripts that students' experience of involvement is course-specific (p. 161). A student may demonstrate varying levels of involvement across the range of courses they study in the course of a degree programme. Thus it is important to distinguish between a general definition of involvement in study (i.e. as

given by students in Q1 and/or Q2) and their involvement experience in individual courses.

As a generalised concept, involvement is defined in qualitatively and quantitatively different ways. An analysis of the open ended questions revealed that involvement was primarily perceived in terms of activity; as either performing basic activities with thoroughness or engaging in learning activities that were seen as 'more than required to pass' the course (p. 154). What was particularly interesting was that both types of activity are associated with a sense of commitment. The discussion in Chapter 2 (p. 85) suggested that commitment can be expressed principally as a sense of personal valuing of what is learnt (Ford, 1979). It may also be possible that commitment represents intellectual engagement with content – the important point being that the material is important to that person and involvement acts to direct learning in a uniquely appropriate way to that person's needs.

A range of involvement activities were identified by students (p. 152). It was interesting that the second year students placed considerable emphasis on course-related interaction and on engaging in activities perceived to be 'more than required' to pass the course. Seventh form students focused on involvement as fulfilling basic requirements. The structured school day may provide an explanation for this difference.

A perception by students of involvement as learning activity is certainly consistent with much of the involvement research (e.g. Miller, 1977; Astin, 1984; Terenzini et al., 1984) particularly as the focus was more on involvement as time spent rather than depth of learning activity[1]. However, this study gave support to Adams, (1979) who argued that involvement combines activity and affect. It appears from the results of this study that involvement reflects positive feelings and a desire to learn in an active way[2] as well as activity itself. As suggested by Adams,

involvement is defined by the student's frame of mind rather than specific involvement activities. In other words, students 'want to' engage in involvement activities.

Involvement as the achievement of a learning objective was an aspect of a general definition of involvement given by some students in this study. This category was not mentioned by Adams (1979), although objectives were included in Terenzini's (Terenzini et al., 1982) scale of classroom involvement. However, Terenzini refers to 'learning' in general terms and does not distinguish between learning quantity or quality. In the present study, one third of the seventh formers included involvement outcome in their definition with over three-quarters (78.7%) of these students referring to a quantitative outcome (e.g. improved grades). In contrast, only 23% of the second year students made any reference to involvement as an objective. Over half of these students made reference to deep outcomes. This pattern of results may be due to the different nature of school and university study - and more particularly due to the fact that the seventh form students completed the questionnaire (Q1) shortly before preparing for their end-of-year examinations.

It would therefore appear that if one is to propose a definition of academic involvement in study it must incoporate all three elements (activity, affect and objectives). Although Adams' (1979) definition was comprehensive in an attempt to define all aspects of involvement, it confused reasons for involvement with a basic perception of the concept and did not allow for a range of involvement activities[3] (e.g. the distinction between involvement activities as basic or more than required). The definition of involvement proposed in Chapter 2 as *commitment expressed through active engagement with the task*, allows for the inclusion of a wide range of qualitatively different learning activities. It also combines affect and activity in the sense that commitment reflects an

affective and/or cognitive desire to learn in a particular way. Such a definition does not exclude the view that involvement can be directed at certain objectives. However, while it is possible to identify a definition that captures the essence of involvement one must not overlook the diversity of definitions produced by students.

The interview transcripts provided a valuable insight into students' experience of involvement. This data confirmed the relation between affect and activity discussed above, but even more significantly, provided evidence for the existence of three levels of involvement: full, limited and no involvement. Each level is defined by the degree of positive affect and the amount and quality of effort expended by the student when involved[4].

1. Full involvement. Fully involved students expressed a sense of strong personal commitment to the course as illustrated by positive feelings directed to their study, a high level of effort (either qualitative or quantitative) and some interaction with teachers and/or learners.

2. Limited involvement. The student made clear that some effort had been expended but this was minimal and included little or no personal commitment to the course and its content. An example of this is a student who perceived that he 'just' fulfilled his 'basic' criteria for involvement.

3. No involvement. Non-involved students clearly stated that they did not perceive themselves to be involved in a course.

These categories are not absolute in the sense that they reflect a student's *perception* of involvement. Regular attendance at lectures may be viewed by one student as limited involvement, but by another (who perceived involvement to be discussing ideas with staff after class) as non-involvement. Such a distinction demonstrates the importance of considering involvement experience in the light of individual definitions and stressing the role of personal commitment as a feature of full involvement.

It must be emphasised that these levels are not generalised but reflect a response to particular courses.

2. WHO BECOMES INVOLVED IN STUDY?

It has been demonstrated above that involvement is not a unitary concept. It was therefore important to examine to what extent involvement definition and experience related to factors such as approach to learning and educational orientation (reason for attending university)[5]. In other words who becomes involved in study and at what level? The results of this study do indicate that approach to learning influences both involvement activity ('basic' or 'more than required') and level of involvement (full, limited or no involvement)[6].

Firstly, students using a surface approach tended to express involvement through 'basic' learning activities. These were often described in quantitative terms such as attending all the lectures or completing all the required reading. In contrast, students adopting a deep approach defined and experienced involvement as engaging in activities that were not only 'more than required' but were also *qualitatively* different to those described by the former group of learners. Such a finding leads one to conclude that the respective outcome of such qualitatively different involvement activities will also differ.

Secondly, students were more likely to be fully involved in at least one course if they used a deep approach than did those with a surface approach to learning. However, one should not take this finding to indicate that a deep approach and involvement are synonymous as not all students who used a deep approach were fully involved in all courses and half of the students using a surface approach indicated full involvement in at least one course. From these results it is possible to conclude that a student's approach to learning plays an important role in influencing the type and

quality of involvement activity undertaken and to some extent affects the level of involvement itself.

The results of principal components analysis certainly indicated that a relationship did exist between a deep approach and involvement, supporting Entwistle (1981) and Ramsden (1984) who have argued that involvement in study may in fact be a feature of a deep approach. The results of this study have also shown that approach to learning determines the nature of involvement activity and experience. It does not determine involvement definition.

Given the high percentage of students in all faculties who were vocationally oriented (over 75%)[7] it was interesting to explore the relation between involvement and educational orientation. Support for such a relationship emerged from the interview transcripts.

It became clear that students, who made some reference to academic orientation (either alone or in combination with a vocational orientation) were more likely to be fully involved than those studying courses where their only orientation was exclusively vocational. Involvement is not incompatible with a vocational orientation as demonstrated by involved students who were able to combine personal and career interests. A key factor in the development of involvement appears to be the existence of interest in the subject matter of the course[8]. A focus on extrinsic goals has been demonstrated to be inconsistent with task involved learning (Nicholls et al., 1985).

Commerce students (many of whom were solely extrinsically vocationally oriented) were involved in courses outside that faculty[9]. These additional courses were studied for interest and demonstrated quite different involvement experiences (i.e. full involvement was more likely to develop). Interest was not the only contributing factor to the involvement of these Commerce students as the role of a positive climate in the 'non-

commerce' courses was also an important factor in the development of involvement. The role of a positive course climate is discussed below.

Gender

Sex differences in approach to learning have not been explored in depth by researchers working in the approach to learning area (e.g. Marton et al., 1984). Watkins and Hattie (1981; 1985) did suggest that female students demonstrated patterns of study that suggested they were less in need of study skills counselling than their male colleagues. Although gender was not included as a factor in the design of this study (refer to comments on future research p. 301), exploratory analysis of the interview data revealed that sex differences appear to be related to student involvement. As the results on p. 210 show, the majority of female students (n=21, 80.8%) were fully involved in at least one course, whereas only 56.3% of the males described a similar level of involvement. However, the relationship is not a simple one as while one can conclude that female students are more likely to be involved in study than their male colleagues, the interaction with factors such as faculty and approach to learning must not be overlooked. A factor in the low level of involvement of male students may be partly due to the high percentage who are enrolled in the Commerce faculty (50% males vs 15.4% females). In addition, female students were also more likely to adopt a deep approach to learning - a factor that has already been associated with full involvement.

These results suggest that female students tend to enrol in courses that either combine interest and vocational concerns (in the case of the female Commerce students) or reflect interest alone. In contrast male students are more likely to enrol in degree programmes where there is little personal interest or commitment, perhaps because they are more preoccupied with future financial concerns. Support for such a proposition also comes from comments made by female students acknowledging that as

their courses did not have a clear vocational focus it was therefore important to get something out of the course for themselves - an objective consistent with full involvement. These findings give further support to the importance of interest for the development of involvement.

3. WHY DO STUDENTS BECOME INVOLVED IN STUDY?

A central part of this thesis was an investigation of factors that are perceived by students to be instrumental in the development of involvement. The open ended questions and interviews indicated that involvement (and non-involvement) develops from a combination of personal and course-related factors. It was proposed in Chapter 7 that students possess a particular intention with regard to becoming involved in a course[10]. The interviews provided evidence for the existence of three intentions: positive, negative and neutral. For the majority of students, intention did not automatically result in involvement activity[11]. The resulting outcome (i.e. involvement or non-involvement) was related to the students' perception of a range of contextual factors as well as the initial intention. With some exceptions, a negative context was sufficient to 'suppress' a positive intention or reinforce a negative or neutral intention with the result that the student stated that they were not involved in that course. A positive context encouraged those students with a positive or neutral intention to actually become involved.

Ramsden (1984) has already conducted considerable research into determining a range of contextual factors that combine to influence a student's approach to learning. The work of this thesis found that some of the factors identified by Ramsden appear to be influential in the development of involvement[12]. Ramsden (1985) suggested that one could identify levels of context (i.e. task, lecturer, course/department and institution). Contextual factors that were significant in the development of involvement were mostly at the lecturer and course levels. It was

interesting to note that departmental characteristics were infrequently mentioned.

Academic staff were the most significant contextual element influencing involvement development and change (p. 258). Their effect was mediated through presentation and attitude. Students were more likely to become involved in a course if the lecturer communicated enthusiasm for the subject to the students in a clear manner which as Hodgson (1984) demonstrated may lead to the development of interest in the subject matter. Lecturers with these positive qualities contributed to students' positive feelings about what they were studying and to the development of interest. For many students, tutorials provided the only opportunity to interact with students in an informal setting[13]. If the situation was indeed informal and non-judgemental students tended to become more involved than in a more formal setting. To the students in this study, the content of a tutorial appeared of secondary importance to the personality and teaching style of the tutor[14]. Although some students related better to younger tutors, the data suggests that it is the personal qualities of the tutor rather than the age that contribute to a positive tutorial climate (p. 259). In general it was important for students to feel valued and not treated impersonally within a course, department or faculty.

Other important contextual factors included form of assessment, the nature of course content and class size. Students differed in their response to internal assessment and final examinations. The theme to emerge was that assessment should be directed towards learning and not be dominated by a concern for grades (p. 262). To achieve such an objective, students believed that assessment should allow students to learn through their mistakes in a non-threatening situation and be structured in such a way as to allow time for reflection - an important factor in the development of a deep approach to learning (Watkins, 1984; Crooks, 1988). An integral part

of fair assessment is the standard of marking. Involvement was more likely to result in a situation where the marking was consistent and based on clearly stated criteria[15].   Course content contributed to involvement in two ways (see p. 259). Firstly, it acted simply to reduce or increase student interest in the subject area and secondly, involvement was influenced by the degree of perceived relevance of the content – either personally or vocationally. Although Hodgson (1984) distinguished between personal and extrinsic relevance, she made no mention of vocational relevance although vocational relevance of courses is referred to by Ramsden (1984). This category is important as it neither reflects assessment concerns (extrinsic) nor the student's attempt to relate the material to their own lives in a more general sense (personal).   It appears that the students in the present study, examine course content for specific personal and/or vocational relevance. Establishing vocational relevance may be an effective way that academic staff can use to develop the interest of students who may otherwise remain uninvolved.

Although class size was not included in Ramsden's Course Perceptions Questionnaire, the students in the present study perceived that large classes contributed to a course climate that discouraged the development of involvement (p. 261). As mentioned above involvement is likely to develop when students feel relaxed and confident enough to participate. In contrast a large class contributes to students' feelings of impersonality and alien ation.

The relationship between context and approach to learning has been discussed in detail by Ramsden (e.g. Entwistle and Ramsden, 1983; Ramsden, 1984). From the results of this study, it appears that a climate conducive to the development of involvement combines many of the factors discussed by Ramsden. For the students in this study, the single most important element of a course climate is the staff – both lecturers and tutors. The

effect is both indirect and direct. Staff directly affect involvement by their attitude to students and teaching style. In contrast, non-involvement was attributed directly to poor presentation and indifference by staff as well as an authoritarian style of tutorial presentation. It was interesting to note that these New Zealand students tended to describe contact with staff within the context of their course contact time. This is in contrast with the emphasis placed on out-of-class contact by Terenzini et al. (1984) in their definition of involvement. Indirectly,. staff act to increase or decrease interest in the content they teach.

There was some evidence to suggest that the involvement of 'surface' students was more likely to be affected by perceived context than students' adopting a deep approach (Biggs, 1985)[16].

These results indicate that student involvement is more likely in a context that is not only perceived to be interesting and relevant (either vocationally or personally) but also helps to make the student feel a sense of being part of the course and department. In addition, competition between students is minimised with opportunities to reflect on one's learning rather than taking part in a continuous search for grades.

Existing subject interest or interest that is aroused by the course context were important personal factors in the development of involvement. There was no evidence to support Biggs and Telfer's claim that intrinsic motivation (interest) increases as the result of involvement. Students perceived interest to be a reason for involvement and thus it appears from the results of the present study that intrinsic motivation acts to stimulate involvement[17]. Involvement is further distinguished from intrinsic motivation by the finding that involvement is indeed course-specific as the role of course context is a crucial element in the development of involvement. In addition, involvement (at least at a limited level) is possible without clear intrinsic goals[18].

A similar interaction between personal and contextual factors emerges when one examines the reasons given by students for involvement change. Here context was particularly important in influencing change. Staff and course content were again given greatest emphasis (p. 273). Personal factors do intrude into the context as the longitudinal data shows. With specific reference to involvement, it was found that for a few students (n=2) involvement changed as the result of different personal goals. At a more general level, exploratory data analysis suggested that the enthusiasm of fully involved students may reduce during their study at university as demonstrated by increased disillusionment, a concern with grades and competition between students as well as increased levels of extrinsic motivation[19].

4. WHY IS INVOLVEMENT IMPORTANT FOR LEARNING?

A central assumption of this thesis has been that involvement has a direct effect on the quality of learning. The following section discusses the effect involvement has on both the quality and quantity of learning and examines how this takes place.

As one might expect from a concept that is both defined and implemented in a range of different ways, students attribute a range of personal and academic benefits to their involvement experience. Both the open ended questions and interviews demonstrated that academic outcomes were of major importance[20]. These outcomes were both qualitative and quantitative and found to be related to approach to study. In the interviews it was found that all but two of the students using a deep approach, clearly indicated that involvement in study was related to a deep level outcome (e.g. high levels of understanding and integration of ideas[21]). It was interesting to note that only one student using a deep approach attributed a quantitative outcome to her involvement. Such a finding is consistent with results reported earlier which demonstrated that students with a deep approach

tended to define and implement involvement in a way that was consistent with their approach to learning. As demonstrated by researchers such as Marton and Saljo (1976a) approach and outcome are clearly related.

Consistent with the view that involvement can be interpreted as participating actively in learning it was not surprising to find that some students found that involvement had led to an improvement in their processing skills. For example, students mentioned a more rigorous and critical approach to problems.

The emphasis placed on academic as opposed to personal outcomes suggests that affect is perceived by students to relate to their definition and experience of involvement rather than to its results. A focus on academic outcomes of involvement probably reflects students' educational orientations. The majority of the students in this study gave vocational and or academic reasons for wishing to attend university. Few expressed a concern with personal development[22]. It seems likely that students directed their involvement activity towards the achievement of academic rather than personal goals.

While quantitative outcomes were of little importance to students adopting a deep approach, those with a predominantly surface approach placed their emphasis on quantitative outcomes as expressed in terms of marks or passing a course (p. 221). Cross-tabulation and multiple regression analysis provided limited support for the existence of a relation between dimension scores of involvement and grade index. This finding can be explained by the fact that such measures are attempts to quantify *general* involvement. As the interviews so clearly show, involvement is course specific (in some cases topic specific) and therefore outcome relates to specific course outcomes. Further detailed analysis is needed to clarify this question.

Involvement was perceived by many students to be a positive feature of their learning experience in the sense that they tended to enjoy learning more and believed that involvement had contributed to academic benefits. Indeed its absence was associated with negative attitudes and a sense of alienation (Goffman, 1957). However for some students, attempts were made *not* to become involved (p. 233). Such attempts were consistent with a perception of involvement in terms of time spent and thus time available to spend studying for other courses was reduced. For students to express involvement as hours spent studying or engaged in other course-related (or university-related) activities, high levels of involvement may result in exhaustion and possibly a decline in academic performance as suggested by Astin (1984).

One of the important contributions involvement makes to learning is to make the experience of learning an enjoyable one for students. Regardless of approach to learning, students want to learn. Through this commitment, persistence in study is more likely to occur. Even a student adopting a surface approach may continue studying long after they might otherwise have given up (Svensson, 1977). Deep levels of understanding may not result, but enough information is retained to satisfy assessment requirements[23].

CONCLUSION

This study has demonstrated that while involvement definition is not determined by factors such as approach to study, educational orientation and gender, approach is significant in affecting students' involvement experience. The effect is mediated through students' choice of involvement activity. Furthermore, as demonstrated by this and other studies, the quality of the activity has a direct effect on the quality of the learning outcome. Involvement may reflect a personal valuing of course content as claimed by Ford (1979) or it may be demonstrated by persistence. Thus the principal contribution involvement makes to learning is to provide students with the energy and enthusiasm to want to learn. This sense of

commitment while often displayed by students with a deep approach to learning is not necessarily determined by approach.

The role of course context provides further illustration of the course specific nature of involvement and may relate to Biggs' (1985) finding that deep approach was more commonly demonstrated in a student's favourite subject so that a deep approach was deployed only where the student is intrinsically motivated. There was some evidence (provided by the Commerce students and those employing a combined approach to learning) that this also applies to involvement.

IMPLICATIONS FOR UNIVERSITY POLICY AND PRACTICE
POLICY

If universities are interested in improving the quality of student learning, these findings have a number of important policy implications for individual departments and faculties as well as the university as a whole. This section will examine the implications of the present findings for the following areas: learning climate, degree structure, staff development and academic advice.

1. Learning climate

The results have demonstrated that a number of contextual factors contribute to the development of a climate conducive to the development and maintenance of academic involvement. The key features of this climate relate to elements that contribute to a relaxed (non-stressful) atmosphere and include class size. Large, impersonal lectures do not contribute to a positive involvement climate unless the course provides additional opportunities for informal discussion in tutorial groups. Victoria University continues to face a crisis of resources, a contributing factor

being increasing student numbers combined with restricted resources such as staffing and space. The negative effect class size and impersonality has on the development of involvement suggests that the continuation of this crisis will have a further deleterious effect on the quality of student learning through lower levels of involvement. The policy implications affect both the provision of sufficient numbers of well trained (see section on staff devlopment below) tutors and the availability of suitable rooms to hold such classes.

2. Degree structure

While the strong vocational educational orientation expressed by the Commerce students contributes to their focus on 'marketable' courses, the finding that a significant number of the Commerce students in this study described areas of interest outside the Commerce core[24] suggests that the learning experience of these students would be improved if they were given greater scope to include a wider range of courses in their degree programme[25]. This option would allow those students who wish, to become fully involved in at least some of their university courses and as a result develop the positive attitudes and academic benefits associated with such an experience.

3. Staff development

The importance of institutional commitment to staff development particularly as it affects teaching, is supported by these results. The quality of teaching in terms of stimulating student interest and conveying ideas clearly in a lecture format are crucial for the development of involvement (p. 258). The continued use of evaluations as a vehicle for students to provide feedback to staff may serve to develop staff awareness of student interests. It is important that staff in general are aware of the importance of academic involvement and, more particularly, ways to encourage its initial development and continued maintenance.

A further productive use of staff development concerns the training of tutors in small group techniques. These techniques should be consistent with a policy in which tutorials are seen as opportunities for student participation rather than as a vehicle for tutor input.

Inconsistencies on the application of marking criteria and a failure to communicate these to students[26] (p. 262) suggests that clearer policy on this matter should be developed by the university as a whole. Large courses that employ large numbers of markers need the resources to ensure that these individuals are both informed of standard marking criteria and trained to apply them. Furthermore, course coordinators need the resources to ensure that thorough moderation is made of the marks given to students and that provision is made for re-marking where necessary.

4. Academic advice

One contributing factor to student dissatisfaction with their courses or degree programme as a whole was the inadequate or inaccurate academic advice given to some students[27]. If students are to become involved in their learning they need to feel that what they are doing is worthwhile in terms of personal and/or vocational objectives and that any compulsory courses taken are absolutely necessary. However, the use of academic advisers may not assist student planning in departments where its climate is formal and impersonal, as academic advice is more likely to be accepted in a situation where the student feels at ease. This point provides further argument for the importance of adequate staffing levels to meet any increases in student numbers and provision of opportunities for students to discuss their work with staff. A key element here is that students must believe that staff are interested in them as individuals and learners.

TEACHING/COURSE DEVELOPMENT

Clearly the previous section has already highlighted a number of features that directly affect teaching and course development. This section

examines the findings as they relate to the activities of individual members of staff in their attempts to provide a climate that is conducive to the development of academic involvement. It is important to recognise that a commitment to become involved originates from the student. Writers such as Newell (1984) and to some extent Astin (1984) place the responsibilty for involvement almost exclusively with the institution and individual staff members. The present study found that in very few cases (n=9) do students enter a course with a negative intention. The figures presented here indicate that many students want to become involved or feel neutral towards the possibility of becoming involved (p. 267). Unfortunately in 17 cases[28] a positive intention to become involved was not realised because of a negatively perceived context and in a further 24 cases, context contributed to students with a neutral intention not becoming involved. These results show that context plays a very important role in the development and maintenance of involvement. With this point in mind, academic staff need to think seriously about the creation of a positive climate that will *encourage* involvement.

To encourage involvement staff must consider both their style of presentation and the content itself. Obviously teaching styles vary (e.g. Bennett, 1976; Entwistle, 1981). One theme to emerge from the results of this study (and from others e.g. Ramsden, 1984) is the importance of staff interest in and enthusiasm for their subject (pages 258 and 270). Apart from the obvious importance of attempting to make lectures lively and stimulating for students, staff should be encouraged to share their research interests with undergraduate as well as graduate students[29]. In addition to providing the opportunity for lecturers to discuss work they find interesting, discussion of staff research interests is likely to contribute to a climate that is conducive to open discussion and active participation by students. In a large class it is clearly unrealistic to expect that lecturers

will get to know many of the students. In this situation the role of the tutor is of key importance. S/he should learn students' names (even if it means using name tags as one student in this study described) and operate the tutorial in a way that is informal and supportive for students (p. 259; 273). Such an approach draws heavily on the work of Rogers (1968) who stressed the importance of respect and honesty between students and teachers if meaningful learning is to take place. The role of the tutor in encouraging students to get to know each other is also important as the creation of a concept of 'class spirit' may assist students to share ideas with their peers.

The nature of content is an element that may be addressed by those designing a course. In making the material relevant to students, consideration must be given to the degree to which content can be made personally and vocationally relevant. In the case of a vocational course it is appropriate to consider the latter as a way of stimulating student interest. Furthermore, this study has pointed to the importance of effective communication between lecturer and students as regards course objectives. A clear overview of the themes of the course is likely to help those students identify key concepts. In addition, clarification of the nature of the course (i.e. specialised or a broad approach to the subject) as well as statements about the lecturers' expectations of students will remove a number of sources of misunderstanding and possible resentment.

It is too simplistic to suggest that such modifications will lead to the full involvement of all students given the range of learning approaches and educational orientations they are likely to bring to the course. One element that did encourage the involvement of some students who already had a positive involvement intention was the provision of opportunities for self-directed learning[30]. The results of this study do not suggest that students envisage a role in course design and planning. This may be because

of lack of interest or time or to a failure to recognise such participation as a realistic possibility. If the latter case is true then students need to be encouraged to take part in course planning.

A further element that might be addressed by course designers is the form of assessment used. In terms of encouraging involvement, assessment is best used as a learning tool rather than as a ranking or labelling device. If assessment is to facilitate learning it must be timed to allow for feedback to be given and restricted so that the student does not become overburdened with assignments (p. 191).

AREAS FOR FUTURE RESEARCH

The study has served to clarify the nature of involvement as perceived by students and demonstrated a relation between involvement and a range of academic benefits (qualitative and quantitative). It became clear during the course of the research programme that contextual factors are important in determining students' involvement experience. It was also clear that the experience of these students was described on a course by course basis. The current study selected students for interview on the basis of their approach to learning or general involvement. To further explore the relation between personal and course factors in the development of involvement it is necessary to focus on involvement in particular courses. The students enrolled in the Commerce faculty provide an interesting focus of such research. In the first place, they study a common core making comparison between individuals easier and secondly these students demonstrated an interesting contrast between interest and vocational courses with correspondingly different patterns of involvement.

A second area of further research lies in the exploration of sex differences. The results of this study provide some evidence that female students differ from their male colleagues in terms of educational

orientation and involvement. With the exception of the work done by Watkins and Hattie (1981;1985) gender differences have been overlooked in the approach to study literature. The exploratory findings of the present study have suggested that a complex interaction exists between sex, approach to learning, involvement and educational orientation. More extensive research is needed to confirm these exploratory findings, and if established, to examine the reasons for such gender differences in acadamic involvement.

The design of this study made it impossible to consider the role ethnic differences might play in determining student involvement. Certainly Watkins (undated) demonstrated that the approaches to learning adopted by Filipino secondary school students do not conform to that proposed for students of European origin (e.g. Entwistle and Ramsden, 1983, Biggs, 1985). Given the limited number of Polynesian (n=1), Indian (n=4) and Asian (n=4) students in the interview sample[31] it is impossible to draw any firm conclusions as to the approach to learning and involvement experience of these students. However, the open ended questions and interviews did indicate the greater importance of parental expectations for these students. Given the intention of New Zealand universities to encourage greater numbers of Maori and Polynesian students as part of their bicultural policy as well as recent government initiatives to encourage greater numbers of Asian students, it is important to identify not only their approaches to learning but also perceptions of learning climates likely to encourage involvement.

A further group of students that was omitted from this thesis was the expanding population of mature students[32]. There has been considerable research done on their reasons for study (e.g. Taylor et al., 1980, MacDonald, 1983), experience and success at university (e.g. Smith et al., 1983) as well as on their approach to learning (Watkins, 1984). Watkins' findings have

indicated that mature students are more likely to choose their own methods of study. Samers (1982) provided evidence to suggest that mature students showed differences in cognitive style from those typical of younger students (i.e. mature students were more field independent). Thus although mature students can be seen to differ significantly from direct-entry students (e.g. Lawler, 1980), the mature student group is a diverse one (Hore and West, 1980) and further research is needed to identify patterns of involvement in this group.

This study has focussed almost exclusively on academic involvement. It was suggested in Chapter 2 that this was only one aspect of involvement at the tertiary level - the other aspect being institutional involvement. As part of the development of the concept of 'involvement', research is needed to clarify the nature of the relationship between academic and institutional involvement. For example, is Astin (1984) correct when he argues that high levels of institutional involvement limit a student's academic involvement?

PROBLEMS

Given the importance of context in the development and maintenance of involvement it was unfortunate that the data did not permit detailed examination of individual courses. By selecting the students on the basis of their approach to learning, a wide range of courses was included in the study. Most of these courses were located in three faculties (Arts, Science and Commerce). This did not allow for comparisons to be made of students' perceptions of course climate or to examine in objective terms such course demands as workload and assessment.

Data on *actual* workload demands was not collected. Thus, responses referring to workload were categorised as 'personal' since they reflected individual perception. This coding of workload may have produced some distortion in weighting of the course/personal analysis. To clarify

this matter, objective measures of course workload are required. However, such data is time-consuming to collect and often unreliable (Clift and Thomas, 1973)

A further problem concerns the generalised measure of involvement and approach to learning as produced by the ASI and interview analysis. A more directed approach to individual courses would have allowed more precise measurement of involvement in both quantitiative and qualitative terms.

CONCLUDING REMARKS

This thesis has highlighted the role of involvement in learning and demonstrated that involvement is an important concept in its own right and one that merits consideration in future research into student learning experiences. Through an exploration of the concept of involvement the results have demonstrated that students are active participants in their learning. They bring a unique collection of personal attributes and expectations to university which will determine their perception of the learning context within which they operate.

In the process of the research, further illustration has been given of the importance of examining concepts such as learning and involvement through the eyes of students. It has also provided further evidence of the value of exploring student learning through the use of interview techniques.

Ultimately the validity of this study and its analysis of academic involvement rests on whether students are able to identify themselves in the material presented here. Rockhill (1982) aptly described the goal of the qualitative researcher thus: 'The goal of the researcher is to enter the defining processes of individuals in order to understand and explain their common sense truths, or interpretations of events, as they occur in their

everyday experiences' (p. 10). The research reported here has attempted to achieve this objective.

NOTES

1. A small number of seventh form and second year students referred to deep level activities (9.2% and 15.1% respectively).

2. Half of the students in this study made some reference to involvement as a feeling associated with study (e.g. enjoyment and satisfaction).

3. 'Active' in these terms is defined as 'doing something' in a way that may not necessarily reflect a deep approach to learning. For example, a student may attend lectures regularly or read the chapters of the text book. They may also attempt to integrate new material with previous learning or look critically at the information presented in lectures or written material. The activities referred to by Adams more specifically relate involvement activity to a deep approach. Miller (1977) was even more specific in his description of involvement behaviour.

4. See Chapter 4 page 159 for a discussion of levels of involvement.

5. These factors are not personal traits or characteristics (Taylor et al., 1980; Entwistle et al., 1979) and one must therefore avoid labelling students as 'fully involved' just as one cannot refer to a 'deep' or 'surface' student (Ramsden, 1985). In the context of this study a student was deemed to be fully involved if they described characteristics of full involvement in at least one course.

6. These results are given in detail in Chapter 5.

7. Refer to Table 5.12 and 5.13 page 200

8. This conclusion is supported by the data relating to personal reasons for involvement (see pages 241, 246 and 254)

9. Only four of the 20 Commerce students were fully involved in a Commerce course. It was particularly interesting that 13 of these students were enrolled in an 'interest' course outside the Commerce faculty (p. 207).

10. See page 249 for a discussion of student intention as it relates to involvement.

11. Only eight students were unaffected by context. Seven of these expressed a clear positive intention and became involved in study. One student failed to become involved as the result of a negative intention (see p. 265 for a detailed discussion of these findings).

12. Involvement was affected by the dimensions included in Ramsden's (1984) Course Perceptions Questionnaire (i.e. good teaching, freedom in learning, openness to students, workload (included in this study as a personal factor: see pages 244 and 245), social climate, formality of teaching methods, standards of assessment and vocational relevance of content.

13. Most first and second year courses at VUW are large and thus much of the teaching is conducted in a large lecture room holding up to 330 students.

14. Refer to discussion on teaching styles on page 65 (note 49).

15. See p. 262 for a discussion of the relation between assessment and involvement.

16. Almost one third of the students adopting a surface approach indicated that context was solely responsible for their·involvement while only 10% of those using a deep approach did so.

17. Messick (1979) distinguishes between preference and interest by arguing that 'a preference is to engage in one activity as opposed to another, whereas an interest induces us to seek out particular objects and activities (p. 282). The present study has provided support for Messick's view of interest in that it provides one important reason for involvement activity

18. See page 204.

19. See page 277.

20. More than three-quarters of the first and second year students believed that involvement was associated with an academic outcome.

21. See page 225.

22. For information on personal educational orientation refer to Table 5.12 p. 200.

23. The data on page 187 (Table 5.8) suggests that fully involved students using a surface approach in fact gain a lower total grade index than non-involved students using the same approach. It would seem then that involvement is not related to improved performance for students adopting a surface approach to learning. However, it should be noted that the figures referred to above reflect academic performance across all courses. As the interviews demonstrated, level of involvement is not consistent across courses and thus a global measure of academic performance may not give an accurate indication of the relationship between level of involvement, approach to study and achievement. (e.g. John who said, '*Architecture* (fully involved) / *suppose I'll be looking for a better mark, it's not the easiest 6 credits you can do, there is a lot to learn...I suppose it'd be nice to know I got a B1 for ARCH, that means I know a fair bit about ARCH whereas I don't care if I know anything about POLS or not...ECON I'll say that's got that over now I can forget it all'.* (John was not involved in Politics or Economics – both were core BCA courses).

24. Only four Commerce students were fully involved in a Commerce course. Seven directed their *full* involvement to courses outside the Faculty.

25. To satisfy the BCA course requirements a minimum of 60 course credits must be taken from the BCA schedule of courses. This leaves a further 48 credit points that may come from courses in other faculties. A typical BCA core programme might include: Economics 100 level (12 credits), Computing 100 level (6 credits), Maths 100 level (6 credits), Accountancy 100, 200 and 300 level (24 credits), Commercial Law 100 and 200 level (12 credits).

26. A number of students (n=21) in this study were cue aware (Miller and Parlett, 1974). Clear statement of assessment requirements were seen as important (e.g. '*I got really worried...I didn't know what the heck they wanted, so I went and saw Prof_ and listened to him and more or less wrote it off that and got a B1'.*)

27. Five students believed that they had either been given bad advice during enrolment (e.g. mistakenly informed that a Maths course was a prerequisite for later study in the Commerce Faculty) or not given advice when the student was unaware of course options (e.g. not informed of the value of including a course to make the resulting degree stronger). Even allowing for the fact that some individuals misunderstood advice, these examples do emphasise the importance of providing unambiguous and uniform information to all students.

28. The term 'cases' does not refer to number of individuals or courses. It refers to the number of involvement relationships referred to by a student (see page 280 note 11).

29. A small number of students (n=4) wanted staff to discuss their research interests.

30. The results provided some evidence that an important factor in the development of involvement was provision of opportunities to engage in individual research (pages 263 and 275). It was also interesting to note that fully involved students were likely to refer to a move to independent learning (p.277), suggesting that these students are responsive to this form of learning and perceive it to be a feature of their university study.

31. Students were not asked to provide information on their ethnic identification in either questionnaire. This omission is unfortunate as ethnic differences are salient to current educational concerns.

32. Mature students have been variously defined. For example, over 25 years (Smith et al., 1983); a person over 23 years engaged in an organised learning programme (MacDonald, 1983); at VUW anyone over 20 yrs and 9 months can enter the university without gaining University Entrance.

APPENDIX A
Questionnaire - pilot study

Student Number _____

School _____

We would like you to indicate whether you agree or disagree with each of the statements listed below.

Please circle the number beside each statement which best conforms with your view or behaviour.

- 4 (✓✓) means definitely agree
- 3 (✓) means agree with reservations
- 1 (✗) means disagree with reservations
- 0 (✗✗) means definitely disagree
- 2 (?) is only to be used if the item doesn't apply to you or if you find it is impossible to give a definite answer

If you accidentally circle two numbers to a question or leave a question out we will have difficulty using any of your data, so please take care and check your answers. If you find that you have circled two numbers to a question indicate clearly the one you intend to give as your answer.

	✓✓	✓	✗	✗✗	?

1. When I am studying I set myself targets (e.g. to read so many pages, to finish the chapter) and keep going until I get there. — 4 3 1 0 2

2. I tend to choose subjects with a lot of factual content rather than theoretical kinds of subjects. — 4 3 1 0 2

3. I normally have a good idea of how well I have done in an essay or test. — 4 3 1 0 2

4. When I am presented with a new problem I spend some time thinking about how I am going to tackle it. — 4 3 1 0 2

5. I try to give extra time to a subject I am not so good at. — 4 3 1 0 2

6. When I am studying I am always aware of the passage of time and how long I should be spending on each topic. — 4 3 1 0 2

7. The courses I plan to do at University will really challenge me as a person. — 4 3 1 0 2

8. Sometimes it pays off to learn things by rote, other times I like to go really deeply into a topic. — 4 3 1 0 2

9. I often have trouble remembering material I think I have learnt really well. — 4 3 1 0 2

10. Teachers shouldn't expect students to spend significant amounts of time studying material everyone knows won't be examined. — 4 3 1 0 2

-2-

	✓✓	✓	✗	✗✗	?

11. I generally take for granted that what I hear from teachers or read in books is correct. — 4 3 1 0 2

12. Often I get so totally absorbed in what I am reading or working on, I find I have not left enough time to complete what I had planned to do. — 4 3 1 0 2

13. I enjoy the chance to discuss a topic I'm really interested in with a teacher or school friend. — 4 3 1 0 2

14. Learning is just a chore. — 4 3 1 0 2

15. During the last few years I have read a lot of books covering widely differing topics. — 4 3 1 0 2

16. I usually become more absorbed in my work the more I do. — 4 3 1 0 2

17. I like to take an active part in discussions — 4 3 1 0 2

18. I can get good marks in a subject even if I'm not really interested in it. — 4 3 1 0 2

19. If I don't do as well as I'd hoped I often blame myself for not trying hard enough. — 4 3 1 0 2

20. When I'm learning something new I try to relate it to what I already know. — 4 3 1 0 2

21. When studying the subjects I like most I find I work very much harder. — 4 3 1 0 2

22. At university I intend to become really involved in the topics that interest me. — 4 3 1 0 2

23. I find that if I read more than one or two books on a topic I get really confused and find it hard to bring my thoughts together. — 4 3 1 0 2

24. I seem to be able to become interested in most of the work we do. — 4 3 1 0 2

25. Even if I'm not actively participating in a class discussion I always try to think critically about what is being discussed. — 4 3 1 0 2

26. I would welcome the chance to become involved in decision making about the way classes are taught at university. — 4 3 1 0 2

27. I don't have any definite reasons for going to university. I'm just trying it out to see if it's for me. — 4 3 1 0 2

28. At university I think that students should have some choice as to how they are assessed (e.g. one end of course exam, throughout the year) — 4 3 1 0 2

	√√	√	x	xx	?
29. I have chosen my course at University mainly to give me a chance of a really good job afterwards	4	3	1	0	2
30. I like to be told precisely what to do in essays, projects, etc.	4	3	1	0	2
31. The continual pressure of work - essays, projects, deadlines and competition - often makes me tense and depressed	4	3	1	0	2
32. The teachers seem to delight in making the simple truth unnecessarily complicated	4	3	1	0	2
33. I usually don't have time to think about the implications of what I have read	4	3	1	0	2
34. My main reason for wanting to go to University is that it will help me to get a better job	4	3	1	0	2
35. I prefer courses to be clearly structured and highly organised	4	3	1	0	2
36. A poor first answer in an exam makes me panic	4	3	1	0	2
37. When I'm reading I try to memorise important facts which may come in useful later	4	3	1	0	2
38. I chose this course more from the way it fits in with career plans than from my own interests	4	3	1	0	2
39. I suppose I am more interested in the qualifications I'll get than in the courses I plan to take at University	4	3	1	0	2
40. Often I find I have to read things without having a chance to really understand them	4	3	1	0	2
41. I find I have to concentrate on memorising a good deal of what we have to learn	4	3	1	0	2
42. The best way for me to understand what technical terms mean is to remember the text-book definition	4	3	1	0	2
43. I tend to read very little beyond what's required for completing essays, projects, etc.	4	3	1	0	2
44. Having to speak in class is quite an ordeal for me	4	3	1	0	2

APPENDIX B
approach to study inventory

BACKGROUND INFORMATION

Name (*please print*) _____

Degree course at VUW _____

| 1-3 |
| 10-11 |

1. Please give your reasons for wanting to attend university.

2. What adjustments have you had to make to university study?

3. What does being 'involved' in a course mean to you?

4. Why/why not have you become 'involved' in any of your courses?

5. If you have been 'involved' in a course, in what ways have you benefited from the experience?

APPROACHES TO STUDYING

I would like you to indicate whether you agree or disagree with each of the statements listed below.

Please circle the number beside each statement which best conforms with your view or behaviour.

4 (√√) means *definitely agree*

3 (√) means *agree with reservations*

1 (*x*) means *disagree with reservations*

0 (*xx*) means *definitely disagree*

2 (?) *is only to be used if the item doesn't apply to you or if you find it is impossible to give a definite answer.*

If you accidentally circle two numbers to a question or leave a question out, we will have difficulty using any of your data, so please take care and check your answers. If you find that you have circled two numbers to a question, indicate clearly the one you intend to give as your answer.

	√√	√	x	xx	?	
1. I certainly want to pass the next set of exams, but it doesn't really matter if I only just scrape through.	4	3	1	0	2	12
2. I generally take for granted that what I hear from teachers or read in books is correct.	4	3	1	0	2	13
3. I spend a good deal of my spare time in finding out more about interesting topics which have been discussed in classes.	4	3	1	0	2	14
4. I think it is important to look at problems rationally and logically without making intuitive jumps.	4	3	1	0	2	15
5. Puzzles or problems fascinate me, particularly when I have to work through the material to reach a logical conclusion.	4	3	1	0	2	16
6. I find I have to concentrate on memorising a good deal of what we have to learn.	4	3	1	0	2	17

312

7. I often get criticised for introducing irrelevant material into my essays or class discussions.
  4 3 x xx ? | 18 |

8. Often I find myself wondering whether the work I am doing here is really worthwhile.
  4 3 1 0 2 | 19 |

9. I find that studying academic topics can often be really exciting.
  4 3 1 0 2 | 20 |

10. I tend to remember things best if I concentrate on the order in which the teacher presented them.
  4 3 1 0 2 | 21 |

11. My main reason for going to University is so that I can learn more about the subjects which really interest me.
  4 3 1 0 2 | 22 |

12. Often I get so totally absorbed in what I am reading or working on I find I have not left enough time to complete what I had planned to do.
  4 3 1 0 2 | 23 |

13. When I'm learning something new I try to relate it to what I already know.
  4 3 1 0 2 | 24 |

14. I suppose I am more interested in the qualifications I'll get than in the courses I plan to take at University.
  4 3 1 0 2 | 25 |

15. Often when I'm reading books, the ideas produce vivid images which sometimes take on a life of their own.
  4 3 1 0 2 | 26 |

16. When I am doing an essay, project, etc., I try to bear in mind exactly what the particular teacher seems to want.
  4 3 1 0 2 | 27 |

17. I hate admitting defeat, even in trivial matters.
  4 3 1 0 2 | 28 |

18. I prefer courses to be clearly structured and highly organised.
  4 3 1 0 2 | 29 |

19. I enjoy the chance to discuss a topic I'm really interested in with a teacher or school friend.
  4 3 1 0 2 | 30 |

20. I find it better to start straight away with the details of a new topic and build up an overall picture that way.
  4 3 1 0 2 | 31 |

21. I have chosen my university courses more from the way they fit in with career plans than from my own interests.
  4 3 1 0 2 | 32 |

22. I can get good marks in a subject even if I'm not really interested in it.
  4 3 1 0 2 | 33 |

23. I like to play around with ideas of my own even if they don't get me very far.
  4 3 1 0 2 | 34 |

24. The teachers sometimes give indications of what is likely to come up in exams, so I look out for what may be hints.
  4 3 1 0 2 | 35 |

25. When I'm tackling a new topic, I often ask myself questions about it which the new information should answer.
  4 3 1 0 2 | 36 |

26. During the last few years I have read a lot of books covering widely differing topics.
  4 3 1 0 2 | 37 |

27. I tend to read very little beyond what's required for completing essays, projects, etc.
  4 3 1 0 2 | 38 |

28. Often I find I have to read things without having a chance to really understand them.
  4 3 1 0 2 | 39 |

29. I need to read around a subject widely before I'm ready to put my ideas down on paper.
  4 3 1 0 2 | 40 |

30. In trying to understand new ideas, I often try to relate them to real life situations to which they might apply.
  4 3 1 0 2 | 41 |

31. If I don't do as well as I'd hoped, I often blame myself for not trying hard enough.
  4 3 1 0 2 | 42 |

32. In trying to understand new topics, I often explain them to myself in ways that other people don't seem to follow.
  4 3 1 0 2 | 43 |

33. Distractions make it difficult for me to do much effective work in the evenings. 4 3 1 0 2

34. I find some academic topics so interesting, I should like to continue with them. 4 3 1 0 2

35. I prefer to follow well tried approaches to problems rather than anything too adventurous. 4 3 1 0 2

36. When studying the subjects I like most, I find I put more effort into them. 4 3 1 0 2

37. Although I generally remember facts and details, I find it difficult to fit them together into an overall picture. 4 3 1 0 2

38. The teacher seems to want me to be more adventurous in making use of my own ideas. 4 3 1 0 2

39. One way or another I manage to get hold of the books I need for studying. 4 3 1 0 2

40. I generally put a lot of effort into trying to understand things which initially seem difficult. 4 3 1 0 2

41. At university, I think that students should have some choice as to how they are assessed (e.g., one end-of-course exam, throughout the year). 4 3 1 0 2

42. Even if I'm not actively participating in a class discussion, I always try to think critically about what is being discussed. 4 3 1 0 2

43. A poor first answer in an exam makes me panic. 4 3 1 0 2

44. I am usually cautious in drawing conclusions unless they are well supported by evidence. 4 3 1 0 2

45. I would welcome the chance to become involved in decision making about the way classes are taught at university. 4 3 1 0 2

44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	

46. At university, I intend to become really involved in the topics that interest me. 4 3 1 0 2

47. I usually become more absorbed in my work the more I do. 4 3 1 0 2

48. I seem to be a bit too ready to jump to conclusions without waiting for all the evidence. 4 3 1 0 2

49. It's important to me to do things better than my friends, if I possibly can. 4 3 1 0 2

50. I find it helpful to 'map out' a new topic for myself by seeing how ideas fit together. 4 3 1 0 2

51. In trying to understand a puzzling idea, I let my imagination wander freely to begin with, even if I don't seem to be much nearer a solution. 4 3 1 0 2

52. When I'm reading an article or book, I generally examine the evidence carefully to decide whether the conclusion is justified. 4 3 1 0 2

53. Continuing my education is something that is just happening to me, rather than something I really want for myself. 4 3 1 0 2

54. The best way for me to understand what technical terms mean is to remember the text-book definition. 4 3 1 0 2

55. Learning is just a chore. 4 3 1 0 2

56. I often find myself questioning things that I read or hear on TV or Radio. 4 3 1 0 2

57. I like to work out several alternative ways of interpreting evidence or findings. 4 3 1 0 2

58. When I'm reading, I try to memorise important facts which may come in useful later. 4 3 1 0 2

57	
58	
59	
60	
61	
62	
63	
64	
65	
66	
67	
68	
69	

		√√	√	x	xx	?	

59. I find it difficult to 'switch tracks' when working on a problem; I prefer to follow each line of thought as far as it will go. 4 3 1 0 2 | 70

60. I'm rather slow at starting work in the evenings. 4 3 1 0 2 | 71

61. I like to take an active part in discussions. 4 3 1 0 2 | 72

62. My main reason for wanting to go to University is that it will help me to get a better job. 4 3 1 0 2 | 73

63. Sometimes it pays off to learn things by rote, other times I like to go really deeply into a topic. 4 3 1 0 2 | 74

64. I usually set out to understand thoroughly the meaning of what I am asked to read. 4 3 1 0 2 | 75

65. Teachers shouldn't expect students to spend significant amounts of time studying material everyone knows won't be examined. 4 3 1 0 2 | 76

66. I often have trouble remembering material I think I have learnt really well. 4 3 1 0 2 | 77

67. Although I have a fairly good general idea of many things, my knowledge of the details is rather weak. 4 3 1 0 2 | 78

68. I find it difficult to organise my study time effectively. 4 3 1 0 2 | 4

69. When I am studying, I am always aware of the passage of time and how long I should be spending on each topic. 4 3 1 0 2 | 5

70. I hope the courses I plan to do at university will really stimulate me as a person. 4 3 1 0 2 | 6

71. The teachers seem to delight in making the simple truth unnecessarily complicated. 4 3 1 0 2 | 7

72. I try to relate ideas in one topic to those in others, whenever possible. 4 3 1 0 2 | 8

73. Having to speak in class is quite an ordeal for me. 4 3 1 0 2 | 9

		√√	√	x	xx	?	

74. I generally prefer to tackle each part of a topic or problem in order, working out one at a time. 4 3 1 0 2 | 10

75. I have chosen my courses at university mainly to give me a chance of a really good job afterwards. 4 3 1 0 2 | 11

76. Ideas in my subjects often set me off on long chains of thought of my own; only tenuously related to what I was reading. 4 3 1 0 2 | 12

77. I try to give extra time to a subject I am not so good at. 4 3 1 0 2 | 13

78. If conditions aren't right for me to study, I generally manage to do something to change them. 4 3 1 0 2 | 14

79. When I am presented with a new problem, I spend some time thinking about how I am going to tackle it. 4 3 1 0 2 | 15

80. I normally have a good idea of how well I have done in an essay or test. 4 3 1 0 2 | 16

81. I usually don't have time to think about the implications of what I have read. 4 3 1 0 2 | 17

82. The continual pressure of work – essays, projects, deadlines, and competition – often makes me tense and depressed. 4 3 1 0 2 | 18

83. I like to be told precisely what to do in essays, projects, etc. 4 3 1 0 2 | 19

84. I enjoy competition: I find it stimulating. 4 3 1 0 2 | 20

85. When I am studying, I set myself targets (e.g., to read so many pages, to finish the chapter) and keep going until I get there. 4 3 1 0 2 | 21

86. My habit of putting off work leaves me with far too much to do at the end of the year. 4 3 1 0 2 | 22

87. It's important to me to do really well in my courses at university. 4 3 1 0 2 | 23

COMMENTS

APPROACHES TO STUDYING

I would like you to indicate whether you agree or disagree with each of the statements listed below.

Please circle the number beside each statement which best conforms with your view or behaviour.

4	(√√)	means definitely agree
3	(√)	means agree with reservations
1	(x)	means disagree with reservations
0	(xx)	means definitely disagree
2	(?)	is only to be used if the item does not apply to you or if you find it is impossible to give a definite answer.

If you accidentally circle two numbers to a question or leave a question out, we will have difficulty using any of your data, so please take care and check indicate clearly the one you intend to give as your answer. If you find that you have circled two numbers to a question,

		√√	√	x	xx	?	
1.	I enjoy the chance to discuss a topic I'm really interested in with a teacher/lecturer or school-friend.	4	3	1	0	2	12 Inv
2.	I often have trouble remembering material I think I have learnt really well.	4	3	1	0	2	13 Sufa
3.	I try to relate ideas in one topic to those in others, whenever possible.	4	3	1	0	2	14 Rel
4.	When I'm doing a subject, I try to bear in mind exactly what that particular teacher/lecturer seems to want.	4	3	1	0	2	15 Sufa
5.	When I'm reading an article or piece from a book, I generally examine the evidence carefully to decide whether the conclusion is justified.	4	3	1	0	2	16 Rel
6.	At University, I intend to become really involved in the topics that interest me.	4	3	1	0	2	17 Inv
7.	I spend a good deal of my spare time in finding out more about interesting topics which have been discussed in classes.	4	3	1	0	2	18 Qee
8.	I usually set out to understand thoroughly the meaning of what I am asked to read.	4	3	1	0	2	19 Qee
9.	I find I have to concentrate on memorising a good deal of what we have to learn.	4	3	1	0	2	20 Surf.

APPROACHES TO STUDYING (continued)

		√√	√	x	xx	?	
10.	When I'm tackling a new topic, I often ask myself questions about it which the new information should answer.	4	3	1	0	2	21 Qee
11.	My main reason for being in University is so that I can learn more about the subjects which really interest me.	4	3	1	0	2	22 Inv
12.	I find it helpful to 'map out' a new topic for myself by seeing how ideas fit together	4	3	1	0	2	23 Qee,
13.	Even if I'm not actively participating in a classroom/tutorial discussion, I always try to think critically about what is being discussed.	4	3	1	0	2	24 Inv
14.	In trying to understand new ideas, I often try to relate them to real life situations to which they might apply.	4	3	1	0	2	25 Rel
15.	Having to speak in tutorials is quite an ordeal for me.	4	3	1	0	2	26 Sufa
16.	I chose my present course mainly to give me a chance of a really good job afterwards.	4	3	1	0	2	27 Ext
17.	Although I generally remember facts and details, I find it difficult to fit them together into an overall picture.	4	3	1	0	2	28 Sufa
18.	I like to be told precisely what to do in essays or other assignments.	4	3	1	0	2	29 Ach
19.	I chose this course more from the way it fits in with career plans than from my own interests.	4	3	1	0	2	30 Exo
20.	I enjoy competition: I find it stimulating.	4	3	1	0	2	31 Art
21.	It's important to me to do really well in my courses at University	4	3	1	0	2	32 Ach
22.	I hope the courses I plan to do at University will really stimulate me as a person.	4	3	1	0	2	33 Inv
23.	I like to take an active part in discussions.	4	3	1	0	2	34 Inv

APPENDIX C

First year students - Victoria University of Wellington (n=101)
Correlations between Q1 and Q2 Dimensions

	DEEP 2	SURFACE	INVOLVE 2	EXT.M 2	ACH.M 2
SURF	-.038	.37*	-.05	-.05	.24
SYLB	-.112	.06	-.25	.118	-0.05
EXT	.067	.133	-0.34	.56	0.18
FF	-.24	.18	-.016	-.031	-.077
EVID	.42	.10	.29	-.09	-.12
REL	.21	.10	.33	-.09	-.06
DEEP	.39	.07	.39	-.23	-.003
INT.M	.48	-.13	.40	-.35	-.22
NEG	-.13	.22	-.41	.39	.03
ACH.M	.22	.21	.03	.24	.28
STRAT	.19	-.001	.15	-.15	.03
DISORG	-.23	.23	-.24	.23	-.005
GLOBE	-.06	.02	-.05	0.5	0.12
IMP	.05	.30	.21	.004	.27
COMP	.27	-.0006	.12	-.14	-.26
OPERAT	-.12	0.31	-.16	.21	.25
INVOL	.30	0.04	0.45	-.14	.14

APPENDIX D

INTERVIEW TOPICS (1)
How are things going so far?
What subjects are you doing this year?
Has university lived up to your expectations? Have they changed?
Organisation of lectures
Taking notes - presentation
Tutorials - organisation - value of discussion
Assignments, essays, process of writing
Involvement - agreement with earlier definition?
Feeling of involvement in courses. Reasons?
Understanding - What do you mean?

INTERVIEW TOPICS (2)
What courses are your taking this year?
How are they going? What is good/bad about them?
Are you happy with your performance overall?
Reason for unhappy feelings - solution?
Has this led to any changes in study habits/attitudes to university?
What do you think you are going to get out of being here?
Is it what you wanted? - reasons for discrepancies
What have you gained so far?
What factors have hindered or helped? e.g. staff, personal, academic.
Have you stuck closely to your original course plan - same major
Why/Why not?

APPENDIX E

Unrotated plot of Factors I and I   (involvement dimension included)

DIS   Disorganised study
NEG   Negative attitudes
EXT   Extrinsic motivation
GLOB Globetrotting
SYLB Syllabus bound
SURF Surface approach
FF   Fear of failure
IMP   Improvidence
OPER Operation learning
ACH   Achievement motivation
COMP Comprehension Learning
REL   Relating ideas
STRAT Strategic approach
DEEP Deep approach
EVID Use of evidence
INT   Intrinsic motivation
INV   Involvement

APPENDIX F

Approach to learning - Seventh form students (n=230)

Promax Rotation

DIMENSIONS	FACTORS				
	I	II	III	IV	V
Surface processing		.67		.35	
Syllabus bound		.57	.44	.40	
Extrinsic motivation			.38	.69	
Fear of failure		.64			
Use of evidence	.76				
Relating ideas	.73				
Deep processing	.80				
Intrinsic motivation	.59		-.63		
Negative attitudes			.81		
Achievement motivation				.77	
Strategic approach	.53			.35	
Disorganised			.56		.54
Globetrotting					.69
Improvidence		.72			
Comprehension learning	.38				.66
Operation learning		.71			
Eigen values	2.77	2.56	2.19	1.63	1.50

A P P E N D I X   G

SCREE TESTS

Seventh form students (n=230)

Seventh form students (n=230) — involvement included

Seventh form students attending university (n=171)

FACTORS

Vocational				Academic			Personal			Social						Summary
qualific only	Good Job	Specific Job	Interest Satisfy Job	Continue Educ.	Specific course	Dev. of Skills	Change	experience	compensation	social	univ. life/ activit	Time	Nothing Else	Family		

Vocational				Academic			Personal			Social						Summary
qualific only	Good Job	Specific Job	Interest Satisfy Job	Continue Educ.	Specific course	Dev. of Skills	Change	experience	compensation	social	univ. life/ activit	Time	Nothing Else	Family		

APPENDIX I

CODING INSTRUCTIONS FOR OPEN ENDED QUESTIONS
These notes were provided to judges at the start of the coding process. Some categories and subsets were modified in the light of discussion between the three judges. Refer to Chapters 4, 5, 6 and 7 for the final categories and subsets.

1. Educational orientation
VOCATIONAL
1. Qualification - a qualification, want a degree. No mention given of purpose.
2. Qualification for a good/well paid job - idea of good prospects, preparation for a career, no specific job mentioned.
3. Qualification for specific career - must name a specific career (e.g. medicine, meteorology).
4. Qualification for interesting/satisfying job - looking for these qualities in job.
*Note student who puts 'further education for good job' or 'specific career' code in vocational section.
ACADEMIC
1. Continue education - Taylor's extrinsic academic, not content specific - increase knowledge, broaden knowledge, continue learning, further education. Answer conveys idea of next step.
2. Content specific - Taylor's intrinsic academic. The content of the course is important. Study in a particular area of interest.
3. Skill development - student wants to develop intellectual skills like independent study, critical thinking.
PERSONAL
1. Broadening - embodies idea of change, related to personal growth, exapanding horizons.
2. Personal experience - includes both affective and cognitive, want to enjoy the course, enjoy learning, experience challenge or sense of achievement.
3. Compensation - test ability of self or to others (see Taylor et al., 1980).
SOCIAL
1. Social objective - meet people, make new friends
2. Experience university - spirit of university life, university activities.
TIME
Not necessarily negative - time to decide on options, reflect
NO BETTER ALTERNATIVE
Fill in time, didn't want a job, negative approach.
FAMILY
Family tradition, expectations.

2. Meaning of involvement
EXPERIENTIAL

Similar to Adams. Experiences and attitudes associated with the course. What they felt during or as a result of the course. Finding the course – enjoyable, interesting, stimulating, engrossing, personally satisfying. definition suggests student feels sense of dedication, feeling of personal commitment, wants to understand, wants to do it for self.

ACTIVITY

Defined as what students *do* when involved.

1. Deep processing activities – thinking, active listening, relating ideas, anything that they do that indicates deep processing activity – note separation from outcome of processing (e.g. understanding)

2. Interaction – responses indicating some sense of interaction, taking active part in activities, discussions. Different from deep processing as this indicates doing something with others.

(subsequent separation of active participation as separate subset)

3. Academic work

Basic – attending, assignment preparation, reading, writing, studying, working hard, listening (passive), spending time, participate fully.

More than required – individual research, reading MTR, writing MTR, learning MTR, finding out MTR.

To fit into 'more than required', needs to specifically mention that they would do more than the basic requirement in terms of time and/or effort.

OUTCOME

1. Depth – understanding, apply ideas

2. Quantitative– improved grades, learn more – an amount of information has been acquired.

*Note: when students put something like learning, try to get idea from other responses as to depth vs quantity.

3. Reasons for involvement

Subsequently revised to add category 'personal'

COURSE RELATED

1. Positive affect – feel good about the course, enjoy it.

2. Academic experience – related to the academic experience i.e. the course was interesting, stimulating, understandable.

3. Social – course and students/lecturer friendly, warm

4. Staff – positive attitudes, assistance, presentation good.

5. Major subject

6. Course organisation – encouraged involvement

OBJECTIVES

Relates to involvement helping them achieve particular objectives

1. Quantitative – passing, getting good marks

2. Qualitative – helping them understand, gain theoretical principles

3. Personal objectives – wanted to be more confident, more informed – idea of self improvement – get something out for themselves.

4. Lack of involvement

PERSONAL

1. Negative affect - dislike course, don't enjoy - feelings about what they are doing.
2. Lack of interest
3. Lack of effort - can't be bothered, don't try
4. Workload - too much work, not enough time
5. Core coure/ credits - prerequisite course or doing it for credits
6. Lack confidence
7. Other interests - better things to do, other activities, sport.

COURSE

1. Course content - content is boring, specifically mention the content rather than personal lack of interest.
2. Staff - wide range of responses - poor lecturing, not interested in teaching (comments on marking covered in assessment subset).
3. Class size - classes too big.
4. Class structure - way the class is organised does not encourage involvement.
5. Assessment - interferes with involvement or bad, inconsistent marking.

5. Benefits of involvement

The results of being involved

PERSONAL

1. Positive affect - self satisfaction, enjoyment, sense of achievement.
2. Personal growth/development - confidence, self awareness, broader outlook, self discipline.
3. Interest/motivation increased

ACADEMIC

1. Deep outcome - able to relate material, better understanding, able to think, other points of view appreciated, theoretical background.
2. Surface outcome - good marks, pass, increase in amount of knowledge, learning (unless obviously deep), better retention.
3. Skills - easier to study, work harder, skill development.

INTERACTION

1. Discussion - share ideas with others (students or family).
2. Staff - specifically mention staff discussions.
3. Social - social contact, more friends.

APPENDIX J

SEVENTH FORM STUDENTS (n=230) CORRELATION OF Q1 DIMENSIONS

	SURF	SYLB	EXT.M	FF	EVID	REL	DEEP	INT.M	NEG	ACH.M	STRAT	DISORG	GLOBE	IMP	COMP	OPERAT	INVOL
SURF		.36	.13	.32	-.05	-.00	0.01	-.07	0.27	0.09	0.18	0.16	0.40	.35	0.00	0.30	-0.06
SYLB			.24	.27	-0.11	0.03	-0.08	-0.16	0.26	0.13	0.10	0.23	0.15	.31	-0.11	0.24	-0.17
EXT				.03	-0.07	-0.08	-0.11	-0.22	0.18	0.27	0.03	0.08	0.16	-0.01	-0.1	0.06	-0.06
FF					0.07	0.12	0.11	0.04	0.09	-0.07	0.02	0.21	0.17	.32	0.08	0.35	-0.08
EVID						.39	0.49	0.36	-0.01	0.10	0.18	-0.11	-0.12	-0.07	0.23	0.08	0.28
REL							0.47	0.34	-0.07	0.11	0.34	-0.15	-0.02	-0.12	.19	0.13	0.27
DEEP								0.44	-0.19	0.16	0.43	-0.23	-0.12	0.08	0.23	0.20	0.31
INT.M									-0.29	0.22	0.26	-0.26	-0.10	0.09	0.17	0.08	0.44
NEG										-0.18	-0.15	0.35	0.24	-0.04	-0.04	0.05	-0.08
ACH.M											0.23	-0.09	0.06	0.04	-0.1	0.05	0.19
STRAT												-.33	-0.14	0.11	0.07	0.13	0.18
DISORG													.30	.13	.12	.05	-.16
GLOBE														.25	0.16	.14	-0.08
IMP															0.10	.42	-.06
COMP																-0.03	0.16
OPERAT																	-0.05
INVOL																	

APPENDIX J

First year students - Victoria University of Wellington (n=101)

	BURS	SFC	GI	83	84	DEEP	SURF	INV	EXT.M	ACH.M
BURS	–	-.72	.61	.63	.46	.04	-.10	-.02	-.08	-.08
SFC		–	-.62	.62	-49	.006	.05	0.06	-.05	0.19
GI			–	.91	.88	-.04	-.27	-.06	-.13	-.12
GI83				–	.59	-.008	-.28	0.14	-.16	0.16
GI84					–	-.12	-.12	-.16	-.09	-.12
DEEP						–	.01	.51	.12	-.03
SURF							–	-.09	.11	.61
INVO								–	-.35	0.02
EXT.M									–	.30
ACH.M										–

Second year students - Victoria University of Wellington (n=66)

	BURS	SFC	GI	82	83	84	DEEP	SURF	INV	EXT.M	ACH.M
BURS	–	-.66	.71	.63	.71	.53	-.007	-.10	0.04	.002	.09
SFC		–	-.72	-.74	-.62	-.66	-.09	0.11	-.18	-0.001	-.18
GI			–	.92	.92	.89	.03	.18	.33	-.28	0.13
GI82				–	.76	.77	.04	-.06	.20	-.16	0.2
GI83					–	.72	009	-24	.29	-.29	01
GI84						–	.14	-27	39	-36	07
DEEP							–	06	38	-08	-08
SURF								–	03	26	27
INV									–	-.30	-.04
EXT.M										–	.28
ACH.M											–

SELECTED BIBLIOGRAPHY

Adams, M. An analysis of meanings attached to "involvement" by ANU students and teaching staff. *In Proceedings of AARE Conference.* Melbourne, 1979, 508-519.

Alton-Lee, A. *Understanding learning and teaching: an investigation of pupil experience of content in relation to immediate and long term learning. Unpublished doctoral dissertation,* University of Canterbury, 1984.

Ames, R. and Ames, C. Research on Motivation in education. Vol 1. *Student motivation.* Orlando: Academic Press, 1984.

Ames, C. and Ames, R. Research on Motivation in Education. Vol 2. *The classroom milieu.* Orlando: Academic Press, 1985.

Anderson, G. J. Effects of classroom social climate on individual learning. *American Education Research Journal,* 1970, 7, 135-152.

Anderson, R. C. How to construct achievement tests to assess comprehension. *Review of Educational Research,* 1972, 42, 145-170.

Apple, M. *Ideology and curriculum.* London: Routledge and Kegan Paul, 1979.

Astin, A. *Preventing students from dropping out.* San Francisco: Jossey Bass, 1975.

Astin, A. W. *Four critical years: Effects of college on beliefs, attitudes and knowlege.* San Francisco: Jossey Bass, 1977.

Astin, A. W. Student involvement: a developmental theory for higher education. *Journal of College Student Personnel,* July 1984, 297-308.

Atkinson, J. W. and Raynor, J. O. (Eds) *Motivation and achievement.* Washington: Winston and sons, 1974.

Ausubel, D. P. *Educational psychology: a cognitive view.* New York: Holt Rinehart and Winston, 1968.

Barrett, E. and Wieneke, C. *Survival strategies of university students: an illuminative case study.* Paper presented at ANZAAS Conference, Auckland, 1979.

Barrow, R. *Giving teaching back to teachers: a critical introduction to curriculum theory.* Brighton; Sussex: Wheatsheaf Books, 1984.

Bartlett, F. C. *Remembering: A study in experimental and social psychology.* Cambridge: Cambridge University Press, 1932.

Bates, J. A. Extrinsic reward and intrinsic motivation: A review with implications for the classroom. *Review of Educational Research,* 1979, 49 (4), 557-576.

Beakley, G. C. and Chilton, E. G. Involvement increases motivation to learn. *Engineering Education,* 1972, 62 (8), 876-878.

Beard, R. M., Bligh, D. A. and Harding, A. G. *Research into teaching methods in higher education mainly in British Universities.* 4th ed. Guildford: SRHE, 1978.

Beaty, E. *The student study contract.* Working party on 'student learning: aims, processes and outcomes'. Paper presented at 4th International Conference on Higher Eduction, University of Lancaster, 1978.

Becker, H. S., Geer, B. and Hughes, E. C. *Making the grade: the academic side of college life.* New York: John Wiley, 1968.

Bennett, S. N. *Teaching styles and pupil progress.* London: Open Books, 1976.

Benware, C. A. and Deci, E. L. Quality of learning with an active versus passive motivational set. *American Educational Research Journal,* 1984, 21(4), 755-765.

Bidwell, C. E. The social psychology of teaching. In R. M. W. Travers (Ed.) *Second handbook of research on teaching.* Chicago: Rand McNally, 1973.

Biggs, J. B. Dimensions of study behaviour, *British Journal of Educational Psychology,* 1976, 46, 68-80.

Biggs, J. B. Individual and group differences in study processes. *British Journal of Educational Psychology,* 1978, 48, 266-279.

Biggs, J. B. Individual differences in study processes and the quality of learning outcomes. *Higher Education,* 1979, 8, 381-394.

Biggs, J. B. Developmental processes and learning outcomes. In J. R. Kirby and J. B. Biggs (Eds) *Cognition, development and instruction.* New York: Academic Press, 1980.

Biggs, J. B. Student motivation and study strategies in University and College of Advanced Education populations. *Higher Education Research and Development,* 1982, 1(1), 33-55.

Biggs, J. B. The role of metalearning in study processes. *British Journal of Educational Psychology,* 1985, 55, 185-212.

Biggs, J. B. The role of metacognition in enhancing learning. *Australian Journal of Education,* 1988, 32 (2), 127-138.

Biggs, J. B. and Kirby, J. R. Emergent themes and further discussion. In J. R. Kirby and J. B. Biggs (Eds) *Cognition, development and instruction.* New York: Academic Press, 1980.

Biggs, J. B. and Telfer, R. *The process of learning.* 2nd ed. Englewood Cliffs, NJ: Prentice Hall, 1987.

Bliss, J. Monk, M. and Ogbourn, J. *Qualitative data analysis for educational research.* London: Croom Helm, 1983.

Bloom, B. S. (Ed.) *Taxonomy of educational objectives: the classification of educational goals, Handbook 1: Cognitive domain.* London: Longmans, 1956.

Bloom, B. S. *Human characteristics and school learning.* New York: McGraw Hill, 1976.

Bonthius, R. H., Davis, F. J. and Drushal, J. G. *The independent study programme in the United States.* New York: Columbia University Press, 1957.

Borgatta, E. F. and Cottrell, L. S. Jr On the classification of groups. *Sociometry,* 1955, 18, 409-422.

Boud, D. Keogh, R. and Walker, D. (Eds) *Reflection: Turning experience into learning.* London: Kogan Page, 1983.

Bower, G. H. and Clark, M. C. Narrative stories as mediators for serial learning. *Psychonomic Science,* 1969, 14, 181-182.

Brandes, D. and Ginnis, P. *A guide to student centred learning.* Oxford: Blackwell, 1986.

Brew, A. and McCormick, B Student learning and an independent study course. *Higher Education,* 1979, 8, 429-441.

Brookfield, S. *Developing critical thinkers: challenging adults to explore.* Milton Keynes: Open University Press, 1987.

Brown, V. A. The self-directed learner: An undiscovered species? In A. H. Miller (ed.) *Freedom and control in higher education.* Sydney: HERDSA, 1980.

Brumby, M. Consistent differences in cognitive styles shown for qualitative biological problem-solving. *British Journal of Educational Psychology,* 1982, 52(2), 244-257.

Calder, B. J. and Staw, B. M. Self perception of intrinsic and extrinsic motivation. *Journal of Personality and Social Psychology,* 1975, 31(4), 599-605.

Carroll, J. B. A model of school learning. *Teachers College Record,* 1963, 64, 723-733.

de Charms R. Motivation enhancement in educational settings. In R. Ames and C. Ames (Eds). Research on motivation in education. Vol 1. *Student motivation* Orlando: Academic Press, 1984

Chickering, A. W. The double bind of field dependence/independence in program alternatives for educational development. In S. Messick (Ed.). *Individuality in learning* San Francisco: Jossey Bass, 1976.

Chickering, A. *The modern American College.* San Francisco: Jossey Bass, 1981.

Child, D. Educational Psychology: Past, present and future. In N. Entwistle (Ed) New directions in educational psychology. Vol 1. *Learning and teaching* London: Falmer Press, 1985.

Clark, B. R. and Trow, M. The organisational context. In T. M. Newcomb and E. K. Wilson (Eds). *College peer groups.* Chicago: Aldine, 1966.

Clifford, G. J. A history of the impact of research on teaching. In R. M. W. Travers (Ed.) *Second handbook of research on teaching* Chicago: Rand McNally, 1973.

Clifford, M. M., Kim, A. and McDonald, B. Responses to failure as influenced by task attribution, outcome attribution and failure tolerance. The *Journal of Experimental Education,* 1988, 57 (1), 19-37.

Clift, J. C., Turner, I, and Willis, D. M. Students at Victoria University: performance and school leaving qualifications compared. *SET* Research information for teachers, Item 2 (NZ), No 2, 1984.

Clift, J. C. and Thomas, I. D. Student Workloads. *Higher Education*, 1973, 2, 447-460.

Codd, J. Images of schooling and the discourse of the state. In J. Codd, R. Harker and R. Nash (Eds). *Political issues in New Zealand education*. Palmerston North: Dunmore Press, 1985.

Cohen, L. and Manion, L. *Research methods in education*. London: Croom Helm, 1980.

Colaizzi, P. F. *Reflection and research in psychology: a phenomenological study of learning*. Dubuque: Kendal/Hunt, 1973.

Collis, K. F. and Biggs. J. B. *Classroom examples of cognitive development phenomena: The SOLO Taxonomy*. University of Tasmania, 1979.

Condry, J. Enemies of exploration: Self initiated versus other initiated learning. *Journal of Personality and Social Psychology*, 1977, 35(7), 459-477.

Condry, J. and Chambers, J. Intrinsic motivation and the process of learning. In M. R. Lepper and D. Greene (Eds). *The hidden costs of reward: new perspectives on the psychology of human motivation*. Hillsdale, NJ: Lawrence Erlbaum, 1978.

Covington, M. V. The motive of self-worth. In R. E. Ames and C. Ames (Eds), Research on motivation in education. Vol 1. *Student motivation*, Orlando: Academic Press, 1984.

Covington M. V. and Omelich, C. I. Are causal attributions causal? A path analysis of the cognitive model of achievement motivation. *Journal of Personality and Social Psychology*, 1979, 37 (9), 1487-1504.

Craik, F. M. and Lockhart, R. S. Levels of processing: a framework for memory research. *Journal of Verbal Learning and Verbal Behaviour*, 1972, 11, 671-684.

Craske, M. L. Learned helplessness, self worth motivation and attribution retraining for primary school children. *British Journal of Educational Psychology*, 1988, 58 (2), 152-164.

Cronbach, L. J. The two disciplines of scientific psychology. *American Psychologist*, 1957, 12, 671-684.

Cronbach, L. J. Beyond the two disciplines of scientific psychology. *American Psychologist*, 30, 1975, 116-127.

Crooks, T. J. and Mahalski, P. Relationships among assessment practices, study methods and grades obtained. In J. Jones and M. Horsburgh (Eds) *Research and development in higher education* Vol 8. Sydney: HERDSA, 1985.

Crooks, T. J. *The impact of classroom evaluation practices on students*. University of Otago, September, 1988.

Dahlgren, L-O Outcomes of learning. In F. Marton, D. Hounsell and N. Entwistle. (Eds) *The experience of learning* Edinburgh: Scottish Academic Press, 1984.

Deci, E. L. *Intrinsic motivation*. New York: Plenum Press, 1975.

Deci, E. L. *The psychology of self-determination* Lexington, Massachusettes: D. C. Heath and Co, 1980.

Delworth, U. and Piel, E. Students and their institutions: interactive perspective. In C. A. Parker (Ed.). *Encouraging development in college students*. University of Minnesota: Minneapolis, 1978.

Dewey, J. *Experience and education* Kappa Delta Pi. (New York: Collier Books Edition, 1963).

Docking, R. A. *Research and Practice: Problems of environmental research at tertiary level* Paper presented at AARE Conference. Brisbane, 1976.

Dressel, P. L. and Thompson, M. M. *Independent Study*. San Francisco: Jossey Bass, 1983.

Dweck, C. S. Intrinsic motivation, percieved control, and self evaluation maintenance: An achievement goal analysis. In Ames, C. and Ames, R. (Eds) Research on motivation in education. Vol. 2. *The classroom milieu* Orlando: Academic Press, 1985.

Dweck, C. S. and Elliot, E. S. Achievement motivation to appear in E. M. Hetherington (Ed.). *Carmicheal's manual of child psychology: Social and personality development* New York: Wiley, 1983.

Educational Research and Advisory Unit, Surveys of student workload in 1978: Full time undergraduate arts, science and commerce students, Report 48, University of Canterbury, 1985.

Education Research Office. *Transition from secondary to university education.* Report prepared for the sub-committee of the Victorian Chapter of the College of Education, 1967.

Elton, L. R. B. and Laurillard, D. M. Trends in research on student learning. *Studies in Higher Education,* 1979, 14, 87-102.

Entwistle, N. Labelling and libelling students. *Times Higher Education Supplement,* 29.3.74.

Entwistle, N. *Styles of learning and teaching.* Chichester: John Wiley, 1981.

Entwistle, N. Contrasting perspectives on learning. In F. Marton, D. Hounsell and N. Entwistle (Eds). *The experience of learning.* Edinburgh: Scottish Academic Press, 1984.

Entwistle, N., Hanley, M. and Hounsell, D. Identifying distinctive approaches to studying. *Higher Education,* 1979a, 8, 365-380.

Entwistle, N., Hanley, M. and Radcliffe, G. Approaches to learning and levels of understanding. *British Educational Research Journal,* 1979b, 5 (10), 99-114.

Entwistle, N. J. and Kozeki, B. Relationships between school motivation, approaches to studying and attainment, among British and Hungarian adolescents. *British Journal of Educational Psychology,* 1985, 55, 124-137.

Entwistle, N. and Ramsden, P. *Understanding student learning.* London: Croom Helm, 1983.

Entwistle, N. Thompson, J. and Wilson J. D. Motivation and study habits. *Higher Education,* 1974, 3, 379-396.

Entwistle, N. and Wilson, J. D. Personality, study methods and academic performance. *University Quarterly,* 1970, Spring, 147-156.

Entwistle, N. and Wilson, J. *Degrees of excellence: the academic achievement game.* London: Hodder and Stoughton, 1977.

Feldman, K. A. and Newcomb, T. M. *The impact of college on students.* Vols 1 and 2. San Fransisco: Jossey Bass, 1969.

Feletti, G. I. Progressive independence in learning as an undergraduate curricular objective. *Programmed Learning and Educational Technology*, 1982, 19 (3), 246-250.

Fergusson, G. A. *Statistical analysis in psychology and education.* (5th ed.). New York: McGraw Hill, 1981.

Filion, F. L. Estimating bias due to non response in mail surveys. *Public Opinion Quarterly.* 1975, 39, 482-492.

Fisher, C. W., Berliner, D. C., Filby, N. N., Marliave, R., Cahen, L. S. and Dishaw, M. M. Teaching behaviors, academic learning time, and student achievement: an overview. In C. Denham and A. Lieberman (Eds) *Time to learn.* National Institute of Edcuation, 1980.

Flavell, J. H. Metacognitive aspects of problem solving. In Resnick, L. B. (Ed.) *The nature of intelligence.* Hillsdale, N. J.: Lawrence Erlbaum, 1976.

Flavell, J. H. and Wellman, H. M. Metamemory. In R. V. Krail and J W Hagan, (Eds). *Perspectives on the development of memory and cognition.* Hillsdale, NJ: Erlbaum, 1977.

Ford, N. Study strategies, orientations and personal meaningfulness in higher education. *British Journal of Technology,* 1979, 10, 143-160.

Ford, N. Levels of understanding and personal acceptance of information in higher education. *Studies in Higher Education.* 1980, 5, 63-70.

Ford, N. Recent approaches to the study and teaching of 'effective learning' in higher education. *Review of Educational Research,* 1981, 51 (3), 345-379.

Fransson, A. On qualitative differences in learning. IV - Effects of intrinsic motivation and extrinsic test anxiety on process and outcome. *British Journal of Educational Psychology,* 1977, 47, 244-257.

Fry, P. S. and Coe, K. J. Interaction among dimensions of academic motivation and classroon social climate: a study of the perceptions of junior high and high school pupils. *British Journal of Educational Psychology.* 1980, 50, 33-42.

Fuhrman, B. S. and Jacobs, R. T. Learning interactions preferences. In *Proceedings of 10th International Conference on Improving University Teaching.* Vol 2. University of Maryland, 1984.

Gagne, R. M. *The conditions of learning* (4th ed.). New York: Holt, Rinehart and Winston, 1985.

Gagne, R. M. and Dick, W. Instructional Psychology. *Annual Review of Psychology,* 1983, 34, 261-295.

Getzels, J. W. A social psychology of education. In G. Lindsey and E. Aronson (Eds). The handbook of social psychology. Vol 5. Den Mills, Ontario: Addison Wesley, 1969.

Gibbs, G. *Teaching students to learn: A student centred approach.* Milton Keynes: The Open University, 1981.

Gibbs, G., Morgan, A. and Taylor, E. A review of the research of Ference Marton and the Goteborg Group: a phenomenological research perspective on learning. *Higher Education,* 1982, 11, 123-145.

Gibbs, G., Morgan, A. and Taylor, E. The world of the learner. In F. Marton, D. Hounsell and N. Entwistle. (Eds) *The experience of learning.* Edinburgh: Scottish Academic Press, 1984.

Ginn, K. Student directed learning. In C. Ewan (Ed.) *Self-instruction: a strategy for education of health personnel.* Review paper no. 1. University of New South Wales Centre for Medical Education Research and Development, 1982.

Glaser, R. Instructional technology and the measurement of learning outcomes. *American Psychologist,* 1963, 18, 519-521.

Glaser, R. Components of a psychology of instruction: towards a science of design. *Review of Educational Research,* 1976, 46 (1), 1-24.

Goffman, E. Alientation from interaction. *Human Relations,* 1957, 10, 47-60.

Goffman, E. *Encounters: Two studies in the sociology of interaction.* Indianapolis: Bobbs Merrill, 1961.

Goldschmid, M. L. and Goldschmid, B. *Improving instructional effectiveness in higher education.* Paper presented at 3rd General Conference on Institutional Mangement in Higher Education, OECD, Paris, 1976.

Gomulicki, B. R. Recall as an abstractive process. *Acta Psychologica*, 1956, 12, 77-94.

Goodlad, J. I. *A place called school: prospects for the future.* New York: McGraw Hill, 1984.

Gregorc, A. F. Learning/teaching styles: their nature and effect. In J. W. Keefe (Ed.). *Student learning styles: diagnosing and prescribing programs.* Reston, Va: National Association of Secondary School Principals, 1979.

Hajal, J. *The student trap: A critique of university and sixth-form curricula.* Middlesex: Pelican, 1972.

Hall, R. H., Rocklin, T. R., Dansereau, D. F., Skaggs, L. P., O'Donnell, A. M., Lambiotte, J. G. and Young, M. D. The role of individual differences in the cooperative learning of technical material. *Journal of Educational Psychology*, 1988, 80 (2), 167-171.

Hancock, L. and Bowden, J. *Learning skills for life at a tertiary institution.* Research working paper No. 81.8 Centre for the Study of Higher Education. University of Melbourne, 1981.

Harackiewicz, J. M., Sansone, C. and Manderlink, G. Competence, achievement orientation and intrinsic motivation: a process analysis. *Journal of Personality and Social Psychology*, 1985, 48 (2), 493-508.

Harter, S. and Connell, J. P. A structural model of the relationships among children's academic achievement and their self-perceptions of competence, control, and motivational orientation in the cognitive domain. In J. Nicholls (Ed.), *The development of achievement motivation.* Greenwhich, CT: JAI Press, 1984.

Hawke, G. *Report on post-compulsory education and training in New Zealand*, July, 1988.

Heath, D. H. A model of becoming a liberally educated and mature student. In Parker, C. A. (Ed.). *Encouraging development in college students.* University of Minnesota: Minneapolis, 1978.

Heath, R. H. Personality and development of students in higher education. In Parker, C. A. (Ed.). *Encouraging development in college students.* University of Minnesota: Minneapolis, 1978.

Hodgson, V. Learning from lectures. In F. Marton, D. Hounsell and N. Entwistle (Eds). *The experience of learning.* Edinburgh: Scottish Academic Press, 1984.

Hore, T. and West, L. H. T. (Eds) *Mature age students in Australian higher education.* Melbourne: Higher Education Advisory and Research Unit, Monash University, 1980.

Hounsell, D. Essay planning and essay writing. *Higher Education Research and Development,* 1984, 3 (1), 13-31.

Hudson, L. *Contrary imaginations.* London: Methuen, 1966.

Hunt, D. E. Theorists are persons, too: on preaching what you practice. In Parker, C. A. (Ed.) *Encouraging development in college students.* University of Minnesota: Minneapolis, 1978.

Hunt, J. McV. Toward a history of intrinsic motivation. In H. I. Day, D. E. Berlyne, and D. E. Hunt (Eds) *Intrinsic motivation: a new direction in education.* Toronto: Holt Rinehart and Winston, 1971.

Hunter, S. *Surveys of student workload in 1978: full time undergraduate arts, science and commerce students.* Education Research and Advisory Unit, Univeristy of Canterbury, 1978.

Hull, C. L. *Principles of behaviour.* New York: Appleton, 1943.

Isaacs, G. *Mature age students.* Tertiary Education Institute: University of Queensland, 1982.

Jones, J. *How can we best help students learn?* Paper presented at 3rd National Conference NZARE, Auckland, 1981.

Jones, C. L. Questions of uncertainty: non-cognitive predictors of first year achievement at university. In C. Flood Page and J. Gibson (Eds). *Motivation: non cognitive aspects of student performance.* London: SHRE, 1973.

Jung, O. G. *Psychological types.* New Jersey, Princeton: University Press, 1976.

Kagan, J. Reflection-impulsivity: the generality and dynamics of conceptual tempo. *Journal of Abnormal Psychology,* 1966, 71, 17-24.

Kagan, J. Rosman, B. L. Day, D. Albert, J. and Phillips, W. Information processing in the child: significance of analytic and reflective attitudes. *Psychological Monographs,* 1964, No 578.

Kay, H. Learning and retaining verbal material. *British Journal of Psychology*, 1955, 44, 81-100

Kerwin, M.A. Student involvement as a dimension of the student perceived teaching behaviour of post secondary educators, *Adult education.*

Kiewra, K.A. Dubois, N.F., Christian, D. and McShane A. Providing study notes: Comparison of three types of notes for review. *Journal of Educational Psychology*, 1988, 80 (4), 595-597.

Kirby, J.R. and Biggs, J.B. (Eds) *Cognition, development and construction* New York: Academic Press, 1980.

Klinger, E. *Meaning and void: Inner experiences and the incentives in people's lives.* Minneapolis : University of Minneapolis Press, 1977.

Kolb, D.A. Disciplinary inquiry norms and student learning styles: diverse pathways for growth. In A. Chickering (Ed). *The modern American College.* San Francisco: Jossey Bass, 1981.

Laurillard, D. *The process of student learning.* Working Party of 'student learning: aims processes and outcomes.' Paper presented at 4th International Conference on Higher Education, University of Lancaster, 1978.

Laurillard, D. The processes of student learning. *Higher Education,* 1979, 8, 395-409.

Laurillard, D. Learning from problem-solving. In F.Marton, D. Hounsell and N. Entwistle. (Eds) *The experience of learning* Edinburgh: Scottish Academic Press, 1984.

Lawless, C. Student performance: Product of process? In D. Billing (Ed.) *Indicators of performance.* London: SRHE, 1979.

Lawler, Characteristics of the students. In L.H.T. West, T. Hore and E. Eaton (Eds) *Research on mature-age students in Australia.* Monash University Higher Education Advisory and Research Unit, 1980.

Lewin, K. *A dynamic theory of personality.* Selected papers Translated by D.K. Adams and K.E. Zener. New York: McGraw Hill, 1935

Lewin, K *Principles of topological psychology.* Translated by F. Heider and G. Heider. New York: McGraw Hill, 1936.

Lindsay, P.H. and Norman, D.A. *Human information processing* New York: Academic Press, 1972.

Maehr, M.L. Culture and achievement motivation. *American Psychologist,* 1974, 29, 887-896

Maehr, M.L. Continuing motivation: An analysis of a seldom considered educational outcome. *Review of Educational Research,* 1976, 46, 443-462.

Maehr, M.L. Meaning and Motivation: Toward theory of personal investment. In C. Ames, and R. Ames (Eds) Research on motivation in education. Vol 1. *Student motivation* Orlando: Academic Press, 1984.

MacDonald, C. Mature students in higher and further education in Strathclyde Region. *Scottish Adult Education Monographs,* No. 2. Department of Adult and Continuing Education, University of Glasgow, 1983

McDonald, R. What could happen in the classroom. In L.H.T. West, T. Hore, and E. Eaton (Eds). *Research on mature age students in Australia.* Higher Education Advisory and Research Unit, Monash University, 1980.

McGaw, B. Acquisition of expertise in problem solving. *Australian Educational Researcher,* 1984, 11 (1), 5-25.

McKay, R.I. *Workload and satisfaction: comparing courses through students' eyes* Paper presented at NZARE Conference, Wellington, 1983.

McKeachie, W.J. The decline and fall of the laws of learning. *Educational Researcher,* 1974, 7-11.

McKeachie, W.J., Pintrich, P.R., Lin, Y-G and Smith, D. *Teaching and learning in the college classroom : a review of the research literature*. Ann Arbor, Michigan: University of Michigan, 1986.

Marton, F., Phenomenography- describing conceptions of the world around us. *Instructional Science,* 1981, 10, 177-200.

Marton, F. Hounsell D. and Entwistle. N. (Eds) *The experience of learning* Edinburgh: Scottish Academic Press, 1984.

Marton, F. and Saljo, R. On qualitative differences in learning: I Outcome and process. *British Journal of Educational Psychology,* 1976a, 46, 4-1.

Marton, F. and Saljo, R. On qualitative differences in learning: II Outcomes as a function of the learner's conception of the task. *British Journal of Educational Psychology,* 1976b, 46, 115-127.

Marton, F. and Saljo, R. Approaches to learning. In Marton, F.D., Hounsell and N. Entwistle (Eds) *The experience of learning* Edinburgh: Scottish Academic Press, 1984.

Marton, F. and Svensson, L. Conceptions of research in student learning. *Higher Education,* 1979, 8, 471-486.

Mathias, H.S. Science students' approaches to learning. *Higher Education,* 1980, 9,39-51.

Matlin, M.W. *The Psychology of Women* New York: Holt Rinehart and Winston, 1987

Merritt, S.L. and Marshall, J.C. Reliability and construct validity of ipsative and normative forms of the learning style inventory. *Educational and Psychological Measurement,* 1984, 44, 463-472.

Messick, S. Measures of cognitive styles and personality and their potential for educational practice. In Karlheinz Ingenkamp (Ed.). *Developments in educational testing.* Vol 1. London: University of London, Press, 1968.

Messick, S. Potential uses of noncognitive measurement in education. *Journal of Educational Psychology*, 1979, 71, 281-292.

Metirow, J. A critical theory of adult learning and education. *Adult Education*, 1981, 32, 1, 3-24.

Miles, M.B. and Huberman, A.M. *Qualitative data analysis: a sourcebook of new methods*. Beverly Hills: Sage Publications, 1984.

Miller, A.H. Varieties of student involvement in learning: Inferences for course planners. In D. Billing (Ed). *Course design and student learning*, Guildford: SRHE, 1977.

Miller, C.M.L. and Parlett, M. *Up to the mark: A study of the examination game*. London: SRHE, 1974.

Moore, M.G. Towards a theory of independent learning and teaching. *Journal of Higher Education*, 1973, 44, 661-679.

Morgan, A. Gibbs G. and Taylor, E. *Students approaches to studying the social science and technology courses: preliminary studies* Open University, Report No. 4, 1980.

Nehari, M. and Bender, H. Meaningfulness of a learning experience: A measure for educational outcomes in higher education. *Higher Education*, 1978, 7, 1-11.

Newell, L.J. A Catalyst and a touchstone: Involvement in learning. *Change*, 1984, 16, (8), 7-10.

Nicholls, J.G. Quality and equality in intellectual development: The role of motivation in education. *American Psychologist*, 1979, 34, 1071-1084.

Nicholls, J.G. Conceptions of ability and achievement motivation: a theory and its implications for education. In S.G. Paris, G.M. Olson, and H.W. Stevenson (Eds). *Learning and motivation in the classroom*. Hillsdale, NJ: Erlbaum, 1983.

Nicholls, J.G. Conceptions of ability and achievement motivation In R. Ames and C. Ames (Eds) Research on motivation in. education. Vol 1 *Student motivation* New York: Academic Press, 1984.

Nicholls, J.G. Patashnick, M. and Nolen, S.B. *Adolescents' theories education*. Unpublished paper, Purdue University. 1985. Subsequently appeared in Educational Psychology, 1985.

Norman, D. *Memory and attention : an introduction to human information processing*.2nd Ed. New York: John Wiley, 1976.

Novak, J.D. *A theory of education*. Ithaca: Cornell University Press,1977.

Nuttall, D. The implications of National Curriculum Assessments *Educational Psychology,* 1988, Vol 8(4), 229-236

Nuttall, G. and Snook, I. Contemporary models of teaching. In R.M.W. Travers (Ed.) *Second handbook of research on teaching* Chicago: Rand McNally, 1973.

O'Neil, M.J. and Child, D. Biggs SPQ: A British study of its internal structure. *British Journal of Educational Psychology,* 1984, 54, 228-234.

Osterman, D.N. Restructuring the lecture to fit individual learning styles. *In Proceedings of 10th International Conference on improving University Teaching* Vol 3. University of Maryland, 1984.

Pace, R.C. *Achievement and the quality of student effort* Washington D.C. National Commission on Excellence in Education, 1982, 40pp.

Parkyn, G.W. *Success and failure at the university* Vol II *The problem of failure*. Wellington: NZCER, 1967.

Parlett, M. Conditions and contexts for academic motivation. In C. Flood Page and J. Gibson (Eds) *Motivation : non-cognitive aspects of student performance*. London: SHRE, 1973.

Parlett, M and Dearden, G. (Eds) *Introduction to illuminative evaluation: Studies in higher education* Cardiff by the Sea, Calif: Pacific Sounding, 1977.

Parlett, M and Hamilton, D. *Evaluation as illumination: A new approach to the study of innovatory programs.* Edinburgh: Centre for Research in the Educational Sciences, 1972.

Parlett, M. and King J.G. *Concentrated Study*: Research in Higher Education Monograph No 4. London: SHRE, 1971

Pask, G, Styles and strategies of learning. *British Journal of Educational Psychology*, 1976, 46, 128-148.

Pask, G. and Scott, B.E. Learning strategies and individual competence. *International Journal of Man-Machine Studies*, 1972, 4, 217-253.

Paxton, S. *Workloads and assessment demands: first year Commerce and second year Electrical Engineering students. First semester, 1976*. Tertiary Education Institute, University of Queensland, November, 1976.

Peck, R.F. and Havinghurst, R.J. *The psychology of character development*, New York, Wiley, 1960.

Percy, K.A. and Salter, F.W. Student and staff perceptions and the "pursuit of excellence" in British higher education. *Higher Education*, 1976, 5, 457-73.

Perry, W.R. Jr. *Forms of intellectual and ethical development in the college years*. New York: Holt Rinehart and Winston, 1970.

Perry, W.G. Jr. Studying and the student. *Higher Education Bulletin*, 1977, 5 (2), 119-157.

Perry, W.G. Jr. Cognitive and ethical growth: The making of meaning. In A.W. Chickering (Ed) *The modern American College*, San Francisco: Jossey Bass, 1981.

Peters, R.S. *The concept of motivation*. London: Routledge, 1958.

Powell, J.P. From school to university. *The Australian Journal of Education*, 1979, 23 (2), 113-120.

Ramsden, P. Student learning and perceptions of the academic environment. *Higher Education*, 1979, 8, 411-427

Ramsden, P. How academic departments influence student learning. In R. Oxtoby (Ed). *Higher education at the crossroads* Guildford: SHRE, 1981

Ramsden, P. How academic departments influence student learning. *HERDSA News,* 1982, 4(3), 3-5.

Ramsden, P. The context of learning. In F. Marton, D. Hounsell and N. Entwistle (Eds). *The experience of learning.* Edinburgh: Scottish Academic Press, 1984.

Ramsden, P. Student learning research: Restrospect and prospect. *Higher Education Research and Development,* 1985, 4(1), 51-69

Ramsden, P. and Entwistle, N.J. Effects of academic departments on students' approaches to studying. *British Journal of Educational Psychology,* 1981, 51, 368-383.

Richardson, J.T.E. *Student learning in higher education. Educational Psychology,* 1983,3, (3-4), 305-351.

Rockhill, K. Researching participation in adult education: the potential of the qualitative perspective. *Adult Education,* 1982, 33, (1), 3-19.

Roe, E. Assignments: *A report on a study of assignment work in the university.* Brisbane: TEDI, University of Queensland, 1974.

Rogers, C. *Freedom to learn.* Columbus: Charles E. Merrill, 1969.

van Rossum, E.J. and Deijkers, R. Students conceptions of learning and good teaching. *In Proceedings of the 10th International Conference on Improving University Teaching* Vol 2. University of Maryland, 1984.

van Rossum, E.J. and Schenk, S.M. The relationship between learning conception, study strategy and learning outcome. *British Journal of Educational Psychology,* 1984,54,73-83.

van Rossum, E.J. Deijkers, R. and Hamer, R. Students learning conceptions and their interpretations of significant educational concepts. *Higher Education,* 1985, 14, 617-641.

Rudduck, J. *Learning through small-group discussion. A study of seminar work in higher education.* Guildford: SRHE, 1978.

Rutter, M., McMaughan, B., Mortimore, P. and Outson, J. *Fifteen thousand hours: secondary schools and their effects on children London:*Open Books, 1979.

Ryan, R.M., Connell, J.P., and Deci, E.L. A motivational analysis of self-determination and self-regulation in education. In C. Ames and R. Ames (Eds), Research on motivation in education: Vol 2. *The Classroom mileau.* New York: Academic Press.

Saljo, R. *Learning about learning.* Working Party on 'student learning: aims, processes and outcomes'. Paper presented at 4th International Conference of Higher Education, University of Lancaster, 1978.

Saljo, R. Learning approach and outcome: some empirical observations. *Instructional Science,* 1981, 10, 47-65.

Saljo, R. Learning from reading. In F. Marton,D. Hounsell and N *The experience of learning.* Edingurgh: Scottish Academic Press, 1984.

Samers, B.N. *Cognitive style and motivation in continuing education* National Science Foundation Report, 1982, pp.130.

Sarbin, T.R. Role theory. In G. Lindzey, (Ed.) *Handbook of social psychology:* Vol 1. Theory and method. Reading, Mass: Addison Wesley, 1954.

Savicki, V., Schumer, H. and Stanfield, R.E. Student role orientations and college dropouts *Journal of Counselling Psychology* 1970 7 (6), 559-566.

Sas Users Guide : *Statistics* Cary, Nth Carolina: SAS Institute, 1982.

Schmeck, R.R. Learning styles of college students. In R. Dillon and R.Schmeck (Eds) *Individual differences in cognition.* Vol 1. New York: Academic Press, 1983.

Schmeck, R.R. and Grove, E. Academic achievement and individual differences in learning processes. *Applied Psychological Measurement,* 1979, 3 (1), 43-49.

346

Schmeck, R.R., Ribich, F. and Ramanaiah, N. Development of a self-report *Applied Psychological Measurement*, 1979, 1 (3), 413-431.

Sheen, R.A. *A Survey of the reading skills and habits of first year university students.* University of New South Wales, Bulletin No 9, 1974.

Shuell, T.J. Learning theory, instructional theory and adaption. In R.E. Snow, P.A. Frederico, and W.E. Montague (Eds), *Cognitive skills and their acquisition.* Hillsdale, NJ: Lawrence Erlbaum, 1980.

Shuell, T.J. Cognitive conceptions of learing. *Review of Educational Research,* 1986, 56(4), 411-436.

Smith, J.K. Quantitative vs qualitative research: an attempt to clarify the issue. *Educational Researcher,* 1983, 12(5), 4-12.

Smith, J.M., Duncan, P, and Guy, D.M. *Mature students at university: Problems of adjustment.* Paper presented at NZARE Conference, Wellington, 1983.

Smith, N.L. (Ed.) *New techniques for evaluation. New perspectives in evaluation.* Vol 2. Beverly Hills: Sage 1981

Smith, R., Feletti, G. and Hughs,J. Can senior students be good small group tutors, *HERDSA News,* 1986, 8 (1), 7.

Smith, R.M. and Haverkamp, K.K. Toward a theory of learning how to learn. *Adult Education,* 1977, 28 (1), 3-21.

Snyder, B.R. *The hidden curriculum.* New York: Alfred A. Kopf, 1971.

Sprague, G.A. Focusing on student learning: Cognitive psychological assessment in college teaching. *In Proceedings of the 10th International Conference on Improving University Teaching* Vol 3. University of Maryland, 1984,

Stake, R.E. The case study method in social inquiry. *Educational Researcher,* 1978, 7(2), 5-8.

Steinaker, N.W. and Bell, M.R. *The experiential taxonomy: A new approach to teaching and learning.* New York: Academic Press, 1979.

Stephen, K.D. Student participation in communication courses. *Studies in Higher Education,* 1981, 6(2), 173-176.

Stewart, J. Two aspects of meaningful problem-solving in science. *Science Education,* 1982, 66 (5), 731-749.

Svensson, L. On qualitative differences in learning:III Study skills and learning. *British Journal of Educational* Psychology, 1977, 47, 233-243.

Svensson, L. Skill in learning. In F. Marton, D. Hounsell and N. Entwistle. (Eds). *The experience of learning.* Edinburgh: Scottish Academic Press, 1984.

Tabachnick B.G. and Fidell, L.S. Using multi-variate statistics. Cambridge, Phil: Harper & Row, 1983.

Tallmadge, G.K. and Shearer, J.W. Relationships among learning styles, instructional methods, and the nature of learning experiences. *Journal of Educational Psychology,* 1969 60(3), 222-230.

Taversky, A. and Kahneman, D. Availability and heuristic for judging frequency and probability. *Cognitive Psychology,* 1973,5,207-232.

Taylor, E., Gibbs, G. and Morgan, A. *The orientation of students studying the social science foundation course.* Report No. 7, Open University, 1980.

Terenzini, P.T., Pascarella, E.T. and Lorang, W.G. An assessment of the academic and social influences on freshman year educational outcomes. *The Review of Higher Education,* 1982, 5(2),89-109.

Terenzini, P.T., Theophilides, C. and Lorang, W.G. Influences on students' perceptions of their academic skill development during college. *Journal of Higher Education,* 1984, 55(5), 621-636.

Thielens, W. Jr. Undergraduate definitions of learning from teachers. *Sociology of Education,* 1977, 50 (July), 159-81.

Thomas, P.R. and Bain, J.D. Consistency in learning strategies. *Higher Education,* 1982, 11, 249-257.

Tinto, V. Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research,* 1975, 45, 89-125.

Torgesen, J.K., Rashotte, C.A. and Greenstein, J. Language comprehension in learning disabled children who perform poorly on memory span tests. *Journal of Educational Psychology,* 1988, 80 (4), 480-487.

University of Canterbury Educational Research and Advisory Unit. *A study of the relationship between school examination performance (sixth form certificate and bursary) and university examination performance for 1983 and 1984 full time entrants who come to university directly from school,* Report No 66, 1985.

Walberg, H.J. Predicting class learning : an approach to the class as a social system. *American Educational Research Journal,* 1969, 6, 529-542

Walberg, H.J. and Anderson, G.J. Classroom climate and individual learning. *Journal of Educational Psychology,* 1968, 59, 414-419

Viskovic, A.R. *Reflection in adult learning.* Unpublished paper presented as Special Topic for Dip. Ed., Victoria University, 1988.

Voss, J.F. Tyler, S.W. and Yengo, L.A. Individual differences in the solving of social science problems. In R.F. Dillon and R.R. Schmeck (Eds). *Individual differences in cognition,* Vol 1. New York: Academic Press, 1983.

Wankowski J.A. Teaching method and academic success in sixth form and university. *Journal of Curriculum Studies,* 1974, 6 (1),50-60.

Wankowski, J.A. and Cox, J.B. *Temperament, motivation and academic achievement.* Vol I and II. University of Birmingham, 9-73.

Watkins, D. *Factors influencing the study methods of Australian tertiary students*, ORAM, The Australian National University, 1981.

Watkins, D. Identifying the study process dimensions of Australian University students. *Australian Journal of Education*,1982a, 26, 76-85.

Watkins, D. Academic achievement and the congruence of study motivation and strategy. *British Journal of Educational Psychology*, 1982b, 52, 260-263.

Watkins, D. Assessing tertiary study processes. *Human Learning*, 1983a, 2, 29-37.

Watkins, D. Depth of processing and the quality of learning outcomes. *Instructional Science*, 1983b, 12 49-58.

Watkins D. *Beyond tertiary entry scores: Prediction of first year grades at ANU in 1982.* The Australian National University, 1983c.

Watkins, D. Student perceptions of factors influencing tertiary learning. *Higher Research and Development*, 1984 (1), 33-50.

Watkins, D. and Hattie, J. The learning processes of Australian university students: investigations of contextual and personological factors. *British Journal of Educational Psychology*, 1981,51, 384-393.

Watkins, D. and Hattie, J. *A longitudinal study of the learing processes of tertiary students.* Australian National University, July 1983.

Watkins, D. and Hattie, A longitudinal study of the approaches to learning of Australian Tertiary students. *Human Learning* 1985, 4, 127-141.

Watson, M.K. and Willis, D.M. *Teaching applied research to undergraduates: an example from social science.* Occasional Paper No. 12, University Teaching and Research Centre, Victoria University of Wellington, 1984, pp22.

Webb, E.J., Campbell, D.T., Schwartz, R.D. and Sechrest, L. *Unobtrusive measures: Non reactive research in the social sciences.* Chicago: Rand McNally and Co., 1966.

Weiner B. A theory of motivation for some classroom experiences. *Journal of Educational Psychology,* 1979, 71,3-25.

Weiner, B. Some thoughts about feelings. In S.G. Paris, G.M. Olson, and H. W. Stevenson (Eds). *Learning and motivation in the classroom.* Hillsdale, NJ: Earlbaum, 1983.

West, L.H.T., Hore, T., Eaton, E. (Eds). *Research on mature age students in Australia Melbourne.* Higher Education Advisory and Research Unit, Monash University, 1980.

West, L.H.T., Hore, T. and Eaton, E. and Kermond, B.M. *The impact of higher education on mature age students.* Melbourne: Higher Education Advisory and Research Unit, Monash University, 1986.

White, R. Motivation reconsidered: The concept of competence. *Psychological Review,* 1959, 66, 297-333.

Wieneke, C. *Attitude change among minimum time graduates at the University of New South Wales.* Reseach and Development Paper No. 56, TERC, University of New South Wales,1979.

Willis, D.M. and Clift, J.C. Approaches to study adopted by school-leavers. *Proceedings of AARE Conference,* Canberra, 1983.

Wilson, E.K. The entering student: attributes and agents of change.In T.M. Newcomb and E.K. Wilson (Eds) *College peer groups.* Aldine: Chicago, 1966.

Wilson J. *Philosophy and educational research.* Slough, Bucks, NFER, 1972.

Wilson, J.D. *Student Learning in higher education.* London: Croom Helm, 1981.

Wilson, R.C., Gaff, J.G.,Dienst, E.R. Wood, L. and Bavry, J.L. *College professors and their impact on students.* New York: John Wiley, 1975.

Withall J   The development of a technique for the measurement of social-emotional climate in classrooms. *Journal of experimental education,* 1949,17,347-361.

Witkin, H.A. Individual differences in ease of perception of embedded figures. *Journal of Personality,* 1950, 19(1), 1-15.

Witkin H.A., Moore, C.A., Goodenough, D.R. and Cox, P.W. Field dependent and field independent cognitive styles and their educational implications. *Review of Educational Research,* 1977, 47 (1), 1-64.

Woods, D. P S Corner: what about problem based learning. *Journal of College Science Teaching,* 1985, 15 (1), 62-64.

Zangwill, O.L. A note on immediate memory. *Quarterly Journal of Psychology,* 1956, 8, 140-3.