The development of health locus of control scales and a user's guide as a contribution to the personal education of thirteen and fourteen year old pupils in secondary schools

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The Development of Health Locus of Control Scales and a User's Guide as a Contribution to the Personal Education of Thirteen and Fourteen Year Old Pupils in Secondary Schools

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ABSTRACT

The Development of Health Locus of Control Scales and a User's Guide as a contribition to the Personal Education of Thirteen and Fourteen Year Old Pupils in Secondary Schools

This research programme has developed three locus of control scales representing INTERNAL, CHANCE and POWERFUL OTHERS. The former probes the extent to which events and attributes are perceived as being within one's personal control whilst the other scales examine the degree of dependence upon the external factors.

The item pools incorporate physical, social and mental dimensions of a holistic concept of health. Specifically the dimensions are composed of six constructs - physical fitness, physical appearance, acceptance by friends, disagreement with friends, anxiety and contentment.

The scales were developed over a period of two years with groups of pupils in various secondary schools in Wiltshire. A computer programme was designed for analysis of data and used to identify weak items. Altogether four major investigations were undertaken with a total of 561 pupils. The results were then integrated to produce the best balanced set of scales, retaining consistency of wording both within and between item pools without loss of validity or reliability.

A User's Guide was developed in conjunction with a number of the teachers involved in the earlier research. It aims to ensure that the scales are used to best advantage by offering suggestions for a range of applications in various educational settings.

The findings of the research were many. For instance there were wide variations of belief between groups and between individuals within the

same group, indicating that children should be assessed and helped as individuals rather than a homogenous whole. Those pupils with high INTERNAL scores were more likely to accept the link between present behaviour and future health status.

If the scales are to be applied in schools they should form part of the wider assessment and pastoral systems rather than be used in isolation from other recent developments in these aspects of the curriculum. It is with this hope that the thesis is submitted for consideration and examination.

Note

Throughout the text reference has been made to 'he' or 'him' for convenience. Since there is no implication of any gender differential in such wording any statements or conclusions apply equally to males or females.

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CHAPTER ONE

1.1 AIMS IN EDUCATION

1.1.1 Introduction

Since the 1960s the philosophy of education has steadily established itself in Britain as a branch of philosophy. Though many writers had expressed thoughts on education in the past, few had dealt with it in a systematic way in this country. One early landmark had been Hardie's "Truth and Fallacy in Educational Theory" (1942) which took account of the theories of Dewey and Herbart. However the work received very little attention until post-war years. Later philosophers such as Hirst, Ausubel and Bantock made significant contributions to the theory of education and focused attention upon issues such as objectives, outcomes, teaching strategies, learning modes and bodies of knowledge. Their writings, whilst not necessarily providing definitive solutions, have sharpened educators' awareness of the need to determine both their objectives and the most appropriate manner in which their attainment may be best reached and recorded.

This section places Personal and Social Education in the wider educational context. By examining briefly the philosophy of many eminent writers it demonstrates that many of the ideals and aims are synonymous, that the intended outcomes of Personal Education programmes will, if achieved, fulfil many of the declared objectives of education itself. Such an examination must be somewhat superficial but should be seen as a linking mechanism between the narrower focus and the foundation upon which it is constructed.

1.1.2 Aims

It is generally accepted that aims refer to the broad intentions and strategy of a programme or event, reflecting basic principles and underlying theory. Objectives are more precise statements which demonstrate how the aims will be shown in the short term. They may be used as measures of whether the overall plan is being successfully accomplished.

In seeking to identify aims in the field of education it is necessary to consider the respective concepts of "the educated man". This will clearly reflect value systems and the relative merits ascribed to various educational outcomes. Peters (1973) promoted the notion of education for its own intrinsic sake and distinguished forcibly between education and training. He saw an educated man as understanding the principles behind factual information.

> "An educated man must also possess some body of knowledge and some kind of conceptual scheme to raise this above the level of a collection of disjointed facts."
>
> Peters 1973

Peters emphasised the difference between aims of education at the micro level through the efforts of teachers and aims of education at a more general undifferentiated level (macro) where education might be seen as "the means by which a supply of trained manpower is assured".

Hirst (1974) saw the development of a rational mind as being the fundamental objective of education. The acquisition of knowledge must be accompanied by conceptual frameworks which enable relationships between variables to be identified to provide greater understanding of

the world. Though recognising that emotional development was an important component in education Hirst nonetheless stressed intellectual development towards reasoned judgement and rationality as being the primary function of education.

Bantock (1968) argued against Hirst's view that the basic aim of education was the development of a rational mind. He saw education, and thus the curriculum, as needing to adapt to the changing scientific and technological developments of recent decades. Bantock was particularly concerned with educational provision for the children less likely to be taking examinations and argued against the dominance of the cognitive domain in learning. He saw the entire educational culture being alien to a great many pupils in terms of their background, value systems and consciousness. He proposed an "affective-artistic" approach to education rather than the traditional "cognitive-intellectual". In this way, Bantock contended, education would relate to the personality and culture of a great many children for whom at present it failed to provide. Such an approach would provide an education of the emotions in ways sorely neglected by the cognitive curriculum whilst the practical nature of his recommendations would bring greater relevance to life outside of school.

A danger of taking such an approach as Bantock's to the extreme is the stifling of ambition, personal expectations and motivation. In his book "Culture, Industrialisation and Society" (1968) Bantock agreed with the statement made by D.H. Lawrence that "the great mass of humanity should never learn to read and write - never". Such sentiment was based upon a recognition that the majority of the

population had a culture which was non-literary in origin. Many would argue however that it is a somewhat dated view of a bygone era. Modern education has recognised and developed latent intellectual potential in a vast array of children who, by Bantock's extremism, would have been given a practical education alone. There is clearly a middle way providing the broad range of educational experience for all pupils helping each to become all that he is capable of becoming as an individual.

Bloom (1964) developed classifications of educational objectives, divided into three domains: the cognitive, the affective and the psycho-motor. In the cognitive domain intellectual abilities and skills are classified into groups such as comprehension, translation, application and analysis of factual information. In the affective domain objectives such as attending to phenomena and controlled selection are identified, followed by categories of response ranging from acquiescence to enjoyment.

Such a classification system demonstrates the tremendous diversity of educational objectives which may be selected to represent or operationalise the accepted aims of education.

> "We are not simply after people learning facts, not simply after their learning skills, not simply after their learning values or attitudes or habits. We are after all these things and more, and within any of these categories, with very diverse skills, attitudes and dispositions."
>
> Hirst 1974

It stimulates educationists to clarify their aims and objectives and to specify intended changes in the behaviour of pupils. Set out in these terms it is then possible to see whether or not pupils do in

fact achieve these objectives as a result of the education they receive.

It is more realistic to consider "aims in education" rather than attempt to answer the general question "What is the aim of education?". Aims can vary quite legitimately from one area of the curriculum to another. The notion of the educated man characterised by all-round development of a person intellectually, emotionally and socially is an ideal to which many educators would aspire. Each teacher should be contributing to a wider schooling developing the personal qualities necessary to fulfil this notion. The experience should have meaning to the pupils, should relate to life beyond the school, should be stimulating and satisfying, should develop intellectual faculties and should encourage the pupils to want to learn more about themselves and their world. To what extent it should train them for later life is an issue to be considered in the following section.

1.1.3 The Curriculum

The term "curriculum" is used in different senses in the field of education. Many writers use the term loosely as being synonymous with syllabus, courses of study, subjects or even timetable. This results in a consideration of the body of knowledge to be transmitted during such an exercise and has caused many primary teachers, for instance, to disregard curriculum issues since they do not perceive their role as to transmit bodies of knowledge in this formal manner. Kerr (1968) defined "curriculum" as

> "all the learning which is planned and guided by the school, whether it is carried on in groups or individually, inside or outside the school".
>
> Kerr 1968

This raises interesting issues for consideration such as the parameters of "learning". Children learn many things during their educational experiences such as reaction of teachers to dishonesty, swearing, kindness or aggression. Should such aspects of education, often referred to as the hidden curriculum, be planned? If so is there to be a school policy specifying which virtues are to be actively promoted or discouraged? The definition incorporates also the notion of formal and informal activities, recognising that extra curricular activities are part of the total educational programme. Official support for this wider perception of the curriculum is available.

> "Schools should plan their curriculum as a whole. The curriculum received by individual pupils, should not be simply a collection of separate subjects."
>
> DES 1981

A broad definition of "curriculum" enables a full programme of educational experience to be planned accordingly in pursuit of a corresponding wide range of educational aims and objectives. The extent to which such experiences will be formalised will clearly vary from school to school, particularly where the affective domain and hidden curriculum is concerned. The ethos of a school may be extremely dear to one head teacher who will seek to recruit and encourage staff to promote specific attributes in pupils. A system of rewards and sanctions may be developed in some schools which seek to delegate their responsibility to a wider range of pupils or punish those violating expected codes of conduct. Kelly (1982) refers to a

school's "expressive culture" being deliberately planned by some teachers. Where this is so, the values to be learnt clearly form a part of what the teachers plan for their pupils and must therefore be fully accepted as a part of the curriculum.

Others see such effects in a different light as the unintentional by-product of planned educational activities or pupils simply experiencing schooling. Teachers should be aware of this "hidden" learning and accept responsibility for it. To what extent they should actively seek to influence outcomes is for each school to determine. These considerations need to be an integral component of the planning cycle which involves the identification of aims and objectives as discussed earlier.

Tyler (1949) suggested that the curriculum had to be seen as consisting of four elements: objectives, content or subject matter, methods or procedures and evaluation. Tyler proposed four fundamental questions which must be answered in developing any curriculum.

1. What educational purposes should the school seek to attain?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be effectively organised?
4. How can we determine whether these purposes are being attained?

The model has been criticised for not recognising the interrelatedness of the separate elements and the dynamic nature of curriculum development. A cyclical rather than linear model would seem more appropriate.

Other approaches to curriculum planning have emphasised one of these components such as the content or the procedures. Lawton (1973) attempted to provide a model that incorporated Tyler's components and those issues of value that are integral to education. Firstly it is necessary to take note of the nature of knowledge, its different forms and various kinds of logic. Secondly the nature of the children involved must be taken fully into account. Thirdly the curriculum must be cognisant of the social context, the pressures and needs of the society of which the school is part. Lawton thereby acknowledged that curriculum planning could not be carried out in an intellectual vacuum isolated from the culture in which it was being practised.

Taba (1962) took a similar view to Lawton in recognising the necessity of taking the needs of the child more fully into account in curriculum planning. She acknowledged Tyler's key elements but proposed that the curriculum organisation extend to statements of "scope" (what content is to be mastered and what mental process acquired), "sequence" (the ordering of content and of the learner's competencies and skills) and "integration" (the relationship between the various aspects of the curriculum). Taba strongly believed that the main focus should be upon ideas and learner skills rather than subjects and content topics.

Taba's notion of "sequence" may be associated with that of the spiral curriculum which gained in popularity in the mid 1970s. This proposed that content areas of the curriculum should be progressively revisited during pupils' school career as they develop emotionally and intellectually. Such an approach gained acceptance in the field of personal education since it enabled a number of subject areas to be developed progressively in line with pupils' growth.

Lawton and Taba's emphasis upon learners and the social context also encompasses the issue of relevance in curriculum development. Many writers have argued that low levels of motiviation may be attributed to pupils perceiving the curriculum as being irrelevant to their lives and certainly not fulfilling their needs. The Newsom Report (1963) vigorously promoted the issue of relevance to contemporary conditions and the needs of school children. There is little doubt that where prestige and recognition is not being attained through traditional academic achievement the question of relevance in the curriculum becomes even more crucial in motivating pupils to play a full part in the realisation of their own potential. Lawton and Taba's theories, by taking social context and the learners more fully into account, appear to offer scope for the development of curricula which will have greater meaning for its recipients and consequently provide more effective and relevant learning experience in the fullest sense.

In recent years there has been an increasing intensity of pressure for curriculum innovation from many different sources. This has created considerable conflict since traditional subjects are seldom eliminated from the curriculum, resulting often in overcrowded timetables and no little confusion. Some innovations are centred upon new methodology rather than new disciplines, but many varied interest groups also seek the original inclusion of their particular cause or area of study in the curriculum.

A concern that Britain might be falling behind in technological advancement saw the beginning of a number of attempts in the early 1960s to change the curriculum. The Nuffield Foundation along with other bodies injected funds to support such change until the various

movements were drawn together by the establishment in 1964 of the Schools Council for the Curriculum and Examinations. The duality of its role was a major factor in determining its policies and actions since the two elements were potentially in conflict. The relative inability of the Council to affect the examination system limited in many ways its effectiveness in promoting change, particularly in secondary education, and resulted in many of its programmes only being implemented with the less able pupil. It might be claimed that the success of the Schools Council is to be judged not by its direct influence on curriculum change but by the contribution its work has made to promoting debate about the curriculum and to creating an interest and concern for curriculum issues among teachers. Its reconstitution has reduced the level of teacher control over its direction and increased that of many other bodies with an interest in education.

Dissemination of curriculum innovation has proven exceedingly difficult in some cases. Many constraints such as finances, staff attitude, parental pressures and examinations militate against application in the classroom. The Centre-Periphery model has been shown to be quite ineffective in this process since the central control imposes a rationale and programme upon a largely passive recipient. There is often a wide gap between the ideas of a project team and the realities of its implementation. Even when a project team sets out deliberately to support teachers in their own developments rather than to provide a teacher-proof blueprint (e.g. Humanities Curriculum Project, Keele Integrated Studies Project) the same difficulties have been experienced.

> "And so a gap emerges between the ideals and the realities, a gap that in some cases is so wide as to negate the project entirely, at least in terms of the conception of it by its planners."
>
> Kelly 1982

Curriculum innovation may be more successful therefore if it arises from within schools and flourishes as a process of growth rather than external transplantation. This idea overcomes the problem of teacher resistance and increases the likelihood of head teacher support.

> "The school is a human social institution which must be responsive to its own environment and therefore be permitted to develop in its own way to fit that environment."
>
> Skilbeck 1976

It could be argued that those schools initiating their own curriculum development will provide for the needs of their children but that this will exclude the children in other schools with similar needs. A certain amount of external leadership is required in the latter instance but the organisational climate of the school must be suitable for an appropriate response to be made.

Some schools have delegated a senior member of staff to be responsible for curriculum development with particular emphasis upon its development across subject boundaries. Such a person can organise support from outside agencies for any group of teachers engaged in an innovative activity. This teacher can act as a focus for curriculum study groups which serve to make other teachers fully aware of what is entailed in school-based curriculum development. "There can be no curriculum development without teacher development" (Shipman, 1973).

The role of the Local Education Authority is also significant in this process. Many such bodies have formulated policies or guidelines on

specific aspects of the curriculum. Harnessed to county-based and school-based training, advisers can then pursue the extent to which schools respond to the initiatives, giving appropriate guidance, encouragement and support where necessary. The adviser can help to disseminate good practice, facilitate exchange of experience between schools and generally move the development forward towards its full implementation.

1.1.4 Towards a Programme of Personal and Social Education

Innovation in Health, Social and Personal Education faces the same constraints and difficulties discussed earlier. They are one further pressure upon schools to accommodate more planned learning experiences into an existing full timetable. One advantage of these areas of study may be that their broad aims are synonymous with many of the finest educational ideals. Whilst this may engender a sympathetic response from teachers the practical difficulties of effecting change remain. Even if the persuasive phase succeeds difficulties of teacher development still require attention. Rationale and personal philosophy have to be established, a body of knowledge acquired, new methodologies may be demanded and in some cases control may have to be shared with pupils. All these changes may produce anxiety not easily overcome by teachers with established routine and style. Though great possibilities are presented for schools in these areas of personal development the difficulties are clearly evident. The remaining sections of this chapter will examine this potential for change whilst continuing to recognise the challenges to be faced, and overcome.

1.2 PERSONAL AND SOCIAL EDUCATION

1.2.1 Introduction

Schools have always been concerned with personal and social development. Teachers give moral advice and guidance. Pupils explore personal and social issues through literature and opportunities which arise incidentally in various contexts. Teachers show care for children's welfare well beyond their immediate teaching duties. Often this concern is implicit in the ethos or 'way of life' of the school - the rules to be followed or the relationships fostered between teachers and pupils. Personal and social education can, however, be part of the curriculum more directly through tutorial periods and other aspects of the pastoral system or indeed through the specific topics comprising the formal curriculum.

1.2.2 Purpose and Scope

One of the central purposes of personal and social education is to encourage optimal growth of each and every child passing through school life. Maslow (1954) referred to the notion of "helping an individual to become all that he is capable of becoming". Whilst some skills and capabilities may always lie dormant in people through lack of appropriate circumstances, schools should be a major force working towards the reduction of such latency. The fulfilment of individual potential also depends upon the acquisition of characteristics such as self confidence, ambition and assertiveness which may themselves be lacking in individuals due to their socialisation experiences.

In addition to the development of self, personal and social education concerns itself with those aspects of interpersonal relationships

which enable the individual to grow socially. Whilst this may involve certain personal attributes it equally requires a recognition of the needs of other people, acquisition of empathy and a sense of responsibility to others. Personal and social education is also concerned with wider community and national issues, stimulating the individual to clarify his beliefs as a consequence of exploring his feelings and experiences.

There may be instances where this aspect of education is used to socialise young people into an acceptance of the 'status quo' or a stifling of personal ambition. Pupils might, for instance, be encouraged to accept that unemployment is almost inevitable for them in certain areas, as a preparation for such an event. There is a delicate balance between the advocacy of reality and the raising of reasonable expectations in the young. Such a dilemma could be avoided if consideration were given to the range of beliefs involved with any issue rather than a one-sided or extremist view being promoted. Nevertheless it is a concern which requires careful thought by those responsible for curriculum development in education.

Though schools have always been involved in personal and social development most of it has been of an incidental and informal nature in reaction to situations or events. In recent years however has come an increasing recognition that the taught curriculum should identify a formal contribution in this area. Such a component requires a planned approach with specific issues and processes identified for attention.

Health education, in its widest sense, incorporates many of the same principles and aims as those relating to personal education. Where

health is perceived in broad terms the two disciplines could easily become synonymous. In fact the syllabi drawn up for the two disciplines by different authorities are often remarkably similar. This doesn't really matter provided that there exists a clear understanding of the purpose and intentions of the particular programme and all involved with it.

1.2.3 Official Recognition and Support

One of the earliest, and most effective, sources of support for health education being given greater consideration in curriculum planning came in the Newsom Report (1963).

> "There are some important things to learn which belong to a good many disciplines but which do not bulk large enough in any one to be quite sure of a place. Room must be found for them and this will not happen unless a member of the staff is made responsible for seeing that this happens. High on any list of topics would be health education, which may serve as an illustration. Its biological foundations belong to science; its practice and its proof lies to a great extent in the hands of the physical education department; its moral implications to the humanities; its references to home surroundings belong to the head in his dealings with parents; and its setting in a school that is clean and whose equipment makes cleanliness easy belongs to the head in his relation with his governors and his administrative staff."
>
> Newsom 1963

This extract shows that the members of the report were well aware of many of the difficulties facing what may be seen as a very imprecise discipline. Though many departments do make their own individual contribution to health education there is a great need for co-ordination at a senior level.

> "But each one of those (teachers) we have listed may well believe that somebody else is attending to it. And each has enough to do in his own department anyhow. What is everybody's business can easily be nobody's business."
>
> Newsom 1963

The report was also illuminative in recognising the role of school facilities and practices as being supportive of the educational programme. The overall situation however remained piecemeal for a further decade or so with committed authorities or individual schools innovating curriculum development and pursuing their objectives with enthusiasm and zeal.

Two official publications, "Health and Education" (1966) and "A Handbook of Health Education" (1968), were produced by the Department of Education and Science but these focused upon specific topics and made no reference to curriculum planning, co-ordination or development.

The participation of the Schools Council in the 1970s did much to put health and social education on the education map. Its projects, discussed later, heralded a spate of national and local projects, which all served to remind the education sector that this aspect of the curriculum required new and urgent attention. The Schools Council Working Paper 57 (1976) emphasised the need for policy development and a planned approach.

> "There should be a definite policy in every school for the organisation of health education. It should not occur merely as a matter of chance, since this may lead to duplication of experience for some pupils and serious omissions for others."
>
> Schools Council 1976

During the 1970s much effort was put into formalising both health and social education in curriculum terms. Deliberate attempts were made by the Schools Council in particular to place health education more closely under the personal and social education banner, to associate

it more closely with the broader movement of lifeskills and tutorial-based methods. In essence this recognised the processes of health education and combined them with other educational developments for greater mutual benefit and progress.

Personal and social education was assisted considerably by later reports such as that of HM Inspectors following their secondary schools survey in 1979.

> "Further attempts are needed to develop each school's curricular philosophy so that skills, ideas, knowledge and attitudes developed in individual subjects might be better co-ordinated. This co-ordination would help not only with the development of basic skills associated with certain subjects but also with important across-the-board aspects of education, such as language development, health education, moral education ....."
>
> DES 1979

Another publication, "A View of the Curriculum", formulated by HM Inspectorate (1980) as a response to an invitation from the Secretaries of State for Education and Science in England and Wales stated:

> "Schools need to secure for all pupils opportunities for learning, particularly likely to contribute to personal and social development. A range of contexts in which such development may be furthered would include the study of personal relationships, moral education, health education, community studies, and community service."
>
> DES 1980

Further support for the inclusion of a planned programme for all pupils came in another document, "A Framework for the School Curriculum" (1980):

> "Schools contribute to the preparation of young people for all aspects of adult life. This requires many additions to the core subjects such as craft ... or as components in a programme of environmental and social education, health education, preparation

> for parenthood and an adult role in family life. The weight given to individual topics of this kind and the methods of providing for them within the curriculum should vary according to local circumstances, but at one stage of another all should find a place in the education of every pupil."
>
> DES 1980

The DES publication "The School Curriculum" (1981) discussed in some detail the approach to the curriculum which it felt should be followed. It stated that:

> "There are also some essential constituents of the school curriculum which are often identified as subjects but which are as likely to feature in a variety of courses and programmes and may be more effectively covered if they are distributed across the curriculum. These concern personal and social development and can be conveniently grouped under the headings of moral education, health education and preparation for parenthood and family life."
>
> DES 1981

With regard to the aims and purpose of health education the document continued:

> "Health Education, like preparation for parenthood, is part of the preparation of the individual for personal, social and family responsibilities. Health education should give pupils a basic knowledge and understanding of health matters both as they affect themselves and as they affect others, so that they are helped to make informed choices in their daily lives. It should also help them to become aware of those moral issues and value judgements which are inseparable from such choices."
>
> DES 1981

The HMI series "Curriculum Matters" is intended as a contribution to the process of developing general agreement about curricular aims and objectives. Health education is valued sufficiently highly to devote the sixth publication (DES 1986) to its study. The document recognises the need for schools to reflect their educational objectives in their practices and processes as social organisations in their own right.

> "A school's regard for health education should be expressed not only through its normal academic and pastoral arrangements, but also through the whole school environment, the pattern of relationships established, the values transmitted by the personal example of teachers and other adults working in the school, and the self esteem fostered among its pupils. These elements which find expression in the life and work of schools and through, for example, assemblies, clubs and residential outings, contribute to a pupil's social and personal development."
>
> DES 1986

Emphasis is placed throughout the document upon the need for health education to be well planned and co-ordinated. Development of this kind requires links with appropriate external supportive agencies, guidance from the LEA advisory service and in-service training for teachers. All is acknowledged and recommended in the publication as is the need to specify objectives both at the primary and secondary phases of education. A strong point is made concerning continuity between these phases.

> "In the majority of schools the pastoral arrangements for transfer are good, and considerable care is taken to cater for pupils' personal and social needs. Curricular liaison is generally less well developed, particularly for aspects such as health education."
>
> DES 1986

The recommendation therefore is that information is exchanged between primary schools and their associated secondary school about health education curricular content and learning experiences. In this way, together with the other suggestions, the best possible provision is made for educating young people about their own personal health and that of the wider community in which they live.

1.2.4 The Schools' Response

This relative proliferation of official publications, supported by HM Inspectorate and Education Advisory Services, led to important questions being asked of schools and local education authorities.

What is being done at present?

How is it being carried out?

What else should you be doing?

How is it to be done?

What is needed to do it effectively?

In my view the movement appealed to teachers as it related to many of their finest ideals in having chosen initially to enter the profession. The focus of attention was very much that of the child. Of greater importance however was that the new materials being developed helped teachers to put their ideals into practice in very tangible forms and see many results from their efforts.

Though primary teachers may have had sufficient flexibility to welcome the new projects it still required a commitment of time and endeavour to plan an effective scheme of implementation. The crowded secondary school timetable left even less room for manoeuvre. Many local education authorities responded to these difficulties by establishing working parties which produced guidelines, policies, schemes of work and in-service training programmes.

A national survey of schools (Williams, 1985) found that 85 per cent of secondary schools were involved in some kind of health education; 48 per cent of secondary schools had a person responsible for health

education; over 90 per cent of the respondents, who were mainly headteachers or senior members of staff, agreed that schools had a responsibility to teach health education; and 70 per cent of schools felt that health education should be part of a more widely based programme of personal and social education.

On a broader basis a recent survey by Hodgson (1985) of local education authorities concerning policies and practices relating to drug education revealed that 50 per cent of them had designated posts in drug/health education in some or all of their schools, and 65 authorities reported that one or more education officers, advisers, inspectors or education welfare officers were responsible for co-ordinating drug/health education.

1.2.5 Curriculum Development

The Schools Council Health Education Project 5-13, commissioned in 1973, was the first national curriculum development project in health education in this country. The project's aim was to establish health education as an integral part of education, not as an area of concern to be set apart or dealt with separately. Three basic aspects of the project were the importance of self esteem to learning and behaviour; the importance of helping children and young people to make choices and decisions about themselves; and the notion of the health career as a basis for establishing a spiral curriculum. A national network of regional co-ordinators was established for disseminating the project effectively at local level.

The Schools Council Health Education 13-19 Project (based at the University of Southampton) published in 1982 had as its main concern a

co-ordinated approach to health education across the secondary school curriculum. Its major achievement was in developing procedures and materials for the training of school co-ordinators of health education and, during its dissemination phase, from 1982-1984, succeeded in establishing the role and credibility of the co-ordinator in most regions of the country.

During this period other projects were developed which supported the place of broadly-based health and social education in the curriculum. The Active Tutorial Work Project (Baldwin, 1979) is a structured approach to personal and social education which contains a strong element of health education. Its underlying principles have been summarised by Pring (1984) as to:

> encourage greater mutual respect between teacher and pupil and between pupil and pupil;
> create a climate of caring and fairness;
> ensure a sense of achievement (rather than failure) and of personal worth;
> develop a habit of deliberation and reflective learning;
> introduce systematic discussion of significant socio-moral issues;
> approach learning co-operatively rather than competitively;
> foster care for the group and eventually the wider community rather than for self interest; and
> increase group responsibility for decisions taken.

In-service training has been undertaken in over 70 local education authorities, developing a skilled support team who can lead colleagues in their own or other schools in a flexible approach to teaching and

learning. The project has been a catalyst in enabling teachers to review their own teaching styles generally, and to recognise that, through the medium of history or biology, they can also be contributing to personal, social and health education objectives.

The Lifeskills Teaching Programme (Hopson and Scally, 1984) focused almost entirely upon the processes of personal education as opposed to health or social issues. It concerned itself with the acquisition of characteristics such as confidence, esteem and assertiveness by young people. The programme developed a series of exercises which required these various attributes to be displayed and subsequently discussed in groups. A basic aim of this project was to enable people to become "empowered", providing individuals with the desire, and skills, to obtain greater control over their lives on a personal or collective basis. A specialised development of this project "Health Skills" is currently being produced, relating many of the skills acquired during the initial programme to health situations and issues.

The Schools Council/Health Education Council Project "Fit for Life" (1983) is a further example of national curriculum development in recent years. Aimed at slow learners with a chronological age from 5 to 16 years the project seeks to help each child towards a satisfactory life style through the development of attributes such as self-help skills, self awarness and exploration of the environment. Based at the University of Bath the project takes an active learning approach using materials which contain games, discussion points, display and group exercises.

Finally in this brief review of curriculum development is the "My Body" Project (Health Education Council, 1983) which has made a

considerable impact in primary and middle schools since its introduction. The project is an active approach to learning about the functions of the human body with references wherever possible to health implications and consequences of behaviour. A series of work cards describe exercises, games and activities to be undertaken by pupils. This has been shown to reduce the incidence of smoking in the children involved by up to 50 per cent, thus having clear benefits and application to health.

Great progress had undoubtedly been made during the 1970s and 1980s in establishing personal and social education within the planned curriculum. In a time of ever increasing pressure on schools for many causes to be given attention this is no mean achievement. It has been made possible by the enthusiasm and commitment of individual leaders in the field but this would never have been brought to fruition without a recognition of its justificaton by teachers themselves. No curriculum development will be truly implemented without general and ongoing support from teachers. It is extremely heartening therefore to have witnessed this movement during a personal career which has been pursuing a similar objective.

1.3 PROFILING

1.3.1 Introduction

Earlier sections have considered the case for Personal Education in the curriculum and its relationship with the promotion of health in young people. This built upon the initial debate concerning aims and objectives in the field of education. Profiling is a logical development of this process particularly where attention is being

focused upon the need to record and assess personal attributes in addition to those of an academic nature.

1.3.2 The Rationale

Some form of assessment has always been carried out in academic areas of the curriculum in order to measure progress and achievement along approved or prescribed pathways. From the early twentieth century system of "standards" to the imminent General Certificate of Secondary Education this process has continued. In addition to its retrospective measure of attainment the process has also been deployed as a means of allocating people to roles in an occupational or academic setting and as a predictor of future levels of achievement. Formal examinations do reflect, to some extent, personality characteristics such as motivation, conscientiousness, decision making and the ability to perform under pressure. Many other qualities however are not included in such assessment and therefore require alternative measures if an accurate account is to be taken of each person's strengths and weaknesses.

Until recently very little work had been carried out on assessment in the affective domain. Studies however have shown that teachers value information on the personal attributes of their pupils. Wood and Napthali (1975) posed the question "If you were taking over a new class which information about pupils would you find most useful?". The constructs identified most frequently were "interest", "class participation", "quietness", "confidence", "tidiness" and "behaviour". Taken with findings of other research (e.g. Dockrell and Broadfoot, 1977) it provides evidence that teachers do want to take account of

the affective characteristics of pupils in their assessment. However there was, until recently, little to show that this type of assessment was actually taking place, suggesting a low priority being accorded to this objective. The Pupils in Profile Project (Dockrell, 1977) found that only one half of formal records included this information, usually covering concepts such as "diligence", "effort" and "discipline", often represented in vague terms such as "good", "average" or "poor".

Many of the developments of the Scottish Council for Research in Education in the late 1970s were the precursor of later profiling exercises. Innovations such as the clarification of traits and definition of crucial index scales brought objectivity and reliability into what was formerly a minefield of subjectivity. Perhaps Ingenkamp (1977) was near the point when seemingly overstating his belief in this area.

> "At the moment we have the disquieting situation in which teachers make their judgements like amateurs in the field of those objectives which are often regarded as the most important; and are subject to all those prejudices, stereotypes, distortions, etc., to which all people are exposed when they have only their common sense to rely on."
>
> Ingenkamp 1977

The basic case for profiling is that many abilities, skills and personal attributes are not at present incorporated into existing measures of attainment. Their inclusion would provide a fuller and more accurate (or valid) representation of the person concerned. Rather than give a clear pass or fail label, as with traditional examinations, profiles allow a distinction of competency to be made at a very specific level without a blanket rejection of the pupil together with the stigma associated with failure.

1.3.3 Purpose

The idea of profiles has become attractive to a variety of groups and resulted somewhat in a range of systems being developed. The FEU in "A Basis for Choice" (1979) stated that a profile should record assessments rather than be a form of assessment itself. It saw a profile, incorporating some grading, as necessary to provide for the conflicting requirements of validity, reliability, flexibility, comparability, competence grading, experience recording and formative assessment.

There is some confusion between records of achievement and profiles. According to the Schools Council (1981) a record of achievement "might include a profile which delineates a few personal qualities and some basic skills". The Manpower Services Commission (1981) suggested that such records could contribute towards a profile. The survey carried out by HMI in ten mixed comprehensive schools (DES, 1983) identified a variety of reasons why records of achievement were being undertaken. In most cases the pupils involved were those unlikely to be taking public examinations or those at the lower end of any such group. Very little thought had been given to clarification of concepts with the result that:

> "it was rare to find terms defined closely and as a result interpretation of their meaning varied both within and between schools as did the methods of assessment and the definition of grades, where these were awarded."
>
> DES 1983

In some schools no adverse comment was permitted making assessment somewhat difficult and implying criticism through absence of comment.

In some schools a record of experience was all that was maintained with no assessment involved. In some instances the pupils had full control over what was recorded and who had access to it. Overall the survey identified confusion and much inconsistency in the schools.

> "Taken together unsatisfactory assessment procedures, the lack of sound links between the pastoral and academic functions, the fact that in some cases one or other group of staff was not involved directly in the scheme and the varying periods of time over which evidence was gathered together suggest that the information collected was not always of the quality and extent required."
>
> DES 1983

Records of achievement therefore should contribute to the construction of profiles which, according to the FEU (1982) are described as:

> "records of assessments, constructed in part or whole by responsible tutors and/or supervisors collectively or individually, involving a measure of student/trainee participation and, hopefully, accompanied by counselling and guidance."
>
> FEU 1982

This description argues that profiles are neither confidential reports, the content of which is unknown to the individual in question, nor personal records controlled by pupils. Profiles are documents constructed by professional teachers describing as accurately as possible the knowledge, skills, attributes and experiences of an individual relative to a particular curriculum. They should form a basis for discussion and reflection between teacher and taught in the formative stage and be available to parents, employers, education and training personnel in their final form.

Profiles should be employing a "wide and diverse range of assessments not necessarily amenable to aggregation" (FEU, 1982). They should

differentiate pupils from other pupils who share the same total but add up differently. They should reflect the many personal qualities and capabilities held in varying degrees by each pupil, not with a view to classifying or ranking pupils but with a view to showing that "each is in a class of his own" (FEU, 1982).

The South Western Profile Assessment Research Project (1985) embodied many of these principles in its policy statement on profiles.

1. The profile should be both formative and summative.
2. Pupils across the whole ability range within the school should be included in the profile and its development.
3. The profile should include academic and personal aspects to each of which more than one person will contribute.
4. The pupil should retain ownership of the final profile.
5. There should be active involvement of the pupil at all stages in the production of his or her profile.
6. Agencies external to the school, e.g. further or higher education, the Careers Service and employers in the local community, should be involved in the development of the school profile.
7. Profiling should be planned and developed in accordance with the belief that it is central to the learning process.
8. It should be accepted that the profile involves a 'picture in time' of the pupil and that this picture does not purport to predict subsequent achievements.
9. In making assessments, the idea of overall success or failure should be avoided, as should overall averaging of results.

10. There should be a minimum standard of presentation laid down for the final profile report on pupils.

1.3.4 Links With Other Pupil-Centred Aspects of the Curriculum

These profiling developments clearly relate to other areas of the curriculum such as health education, personal and social education, and careers education which focus considerably upon personal development. Accompanied by guidance and support profiling can help pupils learn more about themselves, build upon their strengths rather than dwell upon their weaknesses, foster greater self esteem and assist in the fulfilment of whatever potential each individual possesses. It thus becomes synonymous with those broader conceptualisations of health to be considered in the following chapter. Profiling clearly enhances assessment of pupils but also does much more in terms of personal development. It furthermore contributes to the integration of education and health in the school, an issue to which we now turn.

1.4 SCHOOLING AND HEALTH

In this section it is necessary to consider the role of the school in promoting health for its pupils, staff and the wider community of which it is part. The school is a social system in itself with appropriate responsibilities for its members. Since children spend on average fifteen thousand hours in school (Rutter, 1979) there is clearly great scope for education in health matters to be undertaken. Equally the school must adopt policies and practices which enhance good health in an incidental and planned manner. Alternately where health is being hindered as a result of school-based activity a willingness to change whatever is necessary should prevail.

The first national recognition that schools could, and should, promote health came as a result of the large numbers (up to 30%) of recruits declared unfit on physical grounds for military service in the Boer War. This gave rise to the Report of the Committee on Physical Deterioration in 1904 which reinforced the low state of health in the general population. Major initiatives which followed these events were the introduction of the School Meals Service and the School Health Service in the Education (Administrative Provisions) Act, 1907.

Though the dominant political factor may have been military strength there is little doubt that these developments contributed to a significant rise in the health status of successive generations of young people. Early diagnosis of medical conditions or handicap, developmental screening, immunisation and improvements in school hygiene all played a part in this process, aided by better nutritional standards at school and home. Until the mid 1970s the School Health Service was extremely vigilant with strong leadership and support from both the DHSS and DES. In recent years however a movement towards selective screening has become widespread whilst school meals no longer have to conform to the earlier nutritional criteria. Many believe such changes to be misguided and detrimental to the health of the schoolchild.

The various developments mentioned have a secondary, but nevertheless vital, role insofar as they support the notion that health cannot be promoted adequately by the formal curriculum alone. Rutter (1979) demonstrated that many other school-related factors were important determinants of attitude and behaviour. Allocation of responsibility, reward and punishment were all shown, for instance, to be associated

with pupil achievement and behaviour. Since health behaviour arises from particular attitudes, needs or relationships then the way in which schools operate may have a significant bearing upon outcomes. A school tuck shop committed to raising money for worthy causes (e.g. minibus) may sell products harmful to dental health. Poor sanitation and hygiene amenities may militate against the development of good health habits and routines in self care. Inadequate safety procedures may discourage an awareness of safety as well as safety practices.

In all such ways it is possible to identify the concept of the "health promoting school". Certainly the formal curriculum must incorporate a planned approach to health education as discussed earlier. Equally, if not more important, however is the role of the school in providing a healthy environment, both in physical and human terms, together with its contribution to the health of the community.

A study into child accidents in South Warwickshire by Avery (1983) revealed that just over 10 per cent of all the accident and emergency attendances in local hospitals were the result of an accident at school. This comprised two main categories of causation, those of playground origin and those arising from sporting activities. Both have an important environmental component which is clearly open to criticism if proven to be inadequate. Sports injuries have implications for safety education and training which should form an integral part of the relevant educational programme. Playground accidents involve the provision of safe equipment, safety training and proper supervision of pupils.

The contentious issue of school meals provides a further illustration of the wider role of school and health. Whereas minimum standards of

nutrition were formerly prescribed by statute, the 1981 Education Act removed such a requirement. This resulted in a diverse response ranging from the closure of school meals provision (e.g. Dorset primary schools) to self-financing schemes concerned primarily with sales and efficiency at the expense of quality or nutritional status. Whilst such reactions are of a political nature both at national or local level, it nonetheless has stimulated schools to rethink their role beyond the immediacy of curriculum planning and provision. Many in teaching would not accept this wider social role for themselves or their school. It does require consideration of many ideological issues which may formerly have remained dormant.

The emergence of this debate may in itself be valuable in facilitating policy development within local authorities and individual schools. In addition to those issues raised, other areas for policy formulation include smoking, drugs, alcohol and aids. Here again it is necessary to examine both the formal curriculum and the procedures to be adopted by the organisation to cope with the matter. Should staff be permitted to smoke on the premises? What restrictions should apply? What sanctions are to be imposed on staff or pupils who violate regulations? Though it appears that policy is being advocated as a reaction to problems it is equally, if not more important, for policies to be developed for the curriculum, the hidden curriculum and positive aspects of school life. Which personal attributes are to be fostered and in what way? Are there particular practices such as wider delegation of responsibilities that may promote these attributes? What is to be regarded as acceptable behaviour within the school or individual classrooms? Are pupils to be encouraged to be

kindly and considerate or develop other qualities regarded as being more helpful to life outside school? Whatever basic philosophy is adopted it is important that all staff and pupils understand the foundation upon which the school operates and what it is trying to achieve.

This debate has taken the view that the school is a social system with many parts, roles and relationships. These processes are a vital component of its existence and involve all parties. Catering staff, for instance, have responsibilities for promoting good health by preventing spread of infection associated with food handling and preparation. Staff should take precautions to prevent other infectious diseases of a major (e.g. tuberculosis) or minor (e.g. common cold) nature being introduced to a somewhat vulnerable population. Conversely staff themselves could be affected in a reciprocal manner, such as a pregnant woman being infected by rubella.

Dunham (1984) investigated the issue of stress in teaching with some profound results. The most significant problems were those associated with curricular and organisational change which had altered the teachers' school and their role. Other pressures concerned new pastoral duties, disruptive pupils, larger schools and poor working conditions. Taken together the effect on mental health was found to be severe, not aided in any way by the later dispute in education. The school may not therefore be conducive to the good health of its staff, and in fact, be detrimental to it. There are again grounds for some concern in this particular aspect of schooling and health.

Many contend that schools should be proactive in promoting the health of the community. Innovations such as school groups for visiting the

elderly or handicapped not only foster an awareness of the needs of specific groups but also enhance the quality of such people's lives. Staff and pupils could, where necessary, add their support for improved road safety (e.g. pedestrian crossings, speed limits) or issues such as under-age drinking. More debatable is the extent to which schools should lobby for improved nursery facilities, housing or employment, all of which are considered to be highly political. If health however is perceived in broad terms then all such issues impair it. Schools (and staff) will vary, of course, in the degree of their community involvement. They should accept however that they are part of the community and that change is always possible, given sufficient will and commitment. At the same time constraints are often in force which will have to be reconciled by those charged with determining the role of the school in the present day.

If health is perceived in its widest sense to embrace physical, social and mental dimensions it becomes clear that schooling plays many roles in its promotion. First and foremost pupils' needs must be taken fully into account when considering the effects of the formal curriculum, school ethos, procedures and practices. External agencies such as NHS personnel, the police, road safety officers, and others can make a valuable contribution to the school's health promotion role. However the school must also acknowledge its responsibilities to the health of staff and the wider community, whatever may be the scope of its involvement in these areas. What must be recognised however is that the process and experience of schooling relates to health in many different ways and at various levels. Opportunities are clearly presented for action to be effected by a caring organisation committed to showing its concern for all its members.

1.5 INTEGRATING HEALTH AND EDUCATION

There are many basic principles shared by the respective ideologies of "education" and "health". Whilst each has its own procedures and special circumstances they both seek to help people achieve their objectives whether this be the attainment of academic standards or the restoration of mobility to limbs. Above and beyond goals such as these lies a more fundamental aim. Both focus upon the needs of people and the delivery of a service to best help those needs to be met. There is an increasing acceptance in each field also that the consumers are the major priority rather than practices which may affect the quality of service provided. Consequently there appears to be a conscious drive to involve the consumers more than before in the decision-making processes which determine service development and help given to the client.

Probably the outstanding connecting force between the two disciplines is the desire to contribute to the personal development of young people. Each is striving to assist the realisation of individual potential, to help people to become more independent and self reliant, to develop personal skills such as assertiveness and to foster attributes which enable people to have the confidence to pursue their aspirations in life.

Having agreed the common philosophy and objectives of these two disciplines there remains the question of how the basic principles can be integrated within the context of schooling. Certainly there is no simplistic answer for a great many pressures are increasingly being brought to bear upon schools. Very few modern problems escape the

claim that "the solution lies in educating the young at school". Nevertheless the following sections will show how present practices in the curriculum are already integrating these ideals in a very positive manner in the classroom. A number of proposals will also suggest how further progress can be made by management arrangements in schools that will bring even greater benefit to the pupils, which surely is the major object of the exercise.

A new focus upon "health" is now being advocated in Physical Education. With increasing evidence (Sports Council 1983) of the reduction in regular physical activity in the late teenage years and the association between physical inactivity in adolescence and ill health (Armstrong, 1980) a response has been made under "health-related fitness testing". Studies (e.g. Dickenson, 1985) have also found low levels of vigorous (defined as becoming breathless during the exercise) activity amongst pupils in secondary schools, again reinforcing the need for action. Above all, the movement is seeking to motivate children to enjoy physical activity by offering a wider range of experiences than the traditional team games and gymnasium exercises. Any competitiveness is criterion-referenced in the new movement so that everyone may succeed by monitoring personal progress over time.

By relating physiological measurement to health and teaching the appropriate areas of study the programme may become more meaningful to pupils' lives outside of school. New attitudes and habits will hopefully be developed which not only provide satisfaction as a result of being enjoyable but which will also be sustained in the future, thereby enhancing the health status of all concerned. Armstrong

(1984) has been a leading advocate of this movement and is currently stimulating local education authorities to rethink their Physical Education curricula. Schemes such as Wiltshire's "Healthstart" are a response to Armstrong's efforts and augur well for the future both in terms of lasting pursuit of satisfying physical activity and the promotion of good health. This programme involves the combined efforts of four school departments - Physical Education, Social and Personal Education, Science and Home Economics. Working together under a "health" focus the scheme seeks to give pupils a greater understanding of the body's health needs and shows how each department can contribute to experiences which may be transferred to the pursuit of a lifetime of good health.

In a similar way the Secondary Science Curriculum Review has drawn attention to the contribution that Science can, and does, make to the wider health education programme in schools. There is little doubt that much of the formal health education received by pupils comes within the science faculty. One study found that 20-25% of the health education in the first two years of secondary education came within Science whilst this rose to 40-45% for fourth year pupils studying Biology.

The Review has produced a set of aims which include an understanding of oneself and one's personal well being, giving a clear indication of

> "the need to take into account the personal parameters of science - a move towards the pastoral model".
>
> SSCR 1984

Figure 1 represents an attempt to incorporate the aims into the context of health education which itself has undergone many changes in recent years.

It is felt that Science teachers should consider both the cognitive and affective areas of development in the pupil, since the affective state is often an important variable of cognition. To teach only cognitive skills, without taking into account in a structured teaching way the affective variable, would be to confound the effects of the teaching.

The Review feels that decision-making skills using evaluations of many often conflicting pressures are essential ingredients of health and science education. The personal aspects of self and attitudes as influenced by societal, political and economic considerations are taken into account within the proposed model. In this way much of the focus is shifted to the pupil away from the subject, though retaining its distinctive features and specialist body of knowledge.

Home Economics has traditionally been associated with health education in secondary schools. Through its strong links with child development, personal relationships, and family life considerable opportunities are presented for promoting health in the widest sense both at the individual and community level.

The Home and Family Project (Schools Council, 1979) is an excellent example of a fully integrated, yet highly structured, approach to health education. Based upon Piaget's developmental stages the programme examines a wide range of personal and family issues whilst always pitching the learning experiences at the appropriate level. Themes such as self esteem, decision making and responsibilities are incorporated into the scheme at various points demonstrating that the process of personal development is considered to be an essential component of the project.

One of the early curriculum developments highly relevant in this area was the Schools Council Lifeline Project (McPhail, 1972). This took a planned approach to personal education by devising situations for debate and role play. It particularly sought to encourage a 'considerate way of life' by using empathy and consequences of decisions as major themes. One of the difficulties of such an approach may be the inability of some children to conceptualise in abstract thought the various outcomes of chains of optional choices. McPhail's use of role play was an attempt to overcome this problem by operationalising the concepts into realistic situations.

Similarly Humanities and Social Studies have incorporated much of what may be defined as personal or health education into its syllabuses. Many schemes (e.g. Stenhouse, 1970) have recognised the need for a structured approach in these areas of study and responded accordingly with various innovations. In truth every subject on the timetable provides an opportunity for the focus to be on health. Mathematics and French have been used in cancer education (the ASSEGAI Project), English is an obvious vehicle for a study of human relationships, the history of health can be considered, as can health across geographical boundaries, Drama and Dance can simulate events or issues, whilst Art can encourage visual perception of health matters to be portrayed. Health may therefore be seen in sufficiently broad terms to be relevant "across the curriculum". Such a multiplicity of contributions may well be complementary in a planned and co-ordinated programme.

The danger of such diffusion is lack of direction and cohesion. Two particular strategies may be adopted within schools to prevent such an

occurrence. One is the development of a clear rationale and set of objectives understood by all staff involved. Secondly the delegation of a senior member of staff to co-ordinate the many contributions to the total health programme. The Schools Council Health Education Project 13-18 (1982) recognised the importance of this role to the successful implementation of its project in schools. It therefore developed a special Co-ordinator's Guide which was distributed as part of the national training programme for such personnel.

> "The co-ordinator training is intended to equip a senior member of staff with the tools and the skills to manage a school or a college-focused curriculum development exercise in health education."
>
> Schools Council 1981

Following their own training the co-ordinator's task was then to undertake a complete appraisal of the school's curricular provision for health education, involving stages of review, planning and implementation over a full academic year. A grid system was designed by the Project Team to assist co-ordinators in establishing the contributions being made by various faculties, to identify gaps or duplications in the curriculum and to guide colleagues through an appropriate strategy for developing the school's total programme.

The co-ordinator must be able to present a credible case for extra attention (in terms of curriculum time, planning and staff development) being allocated to this area of study. Given this approval he must then be empowered by position, commitment and personality to bring leadership and cohesion to a range of teachers and faculties. This is no mean task in an era where many conflicting demands are being made upon the curriculum both from within and without schools.

The co-ordinator then is a key factor in facilitating the integration of health into the various subject disciplines in the formal curriculum. He is also able, by the nature of his senior position, to bring attention to bear upon those other aspects of school life, discussed earlier, which either promote or are detrimental to good health. He should be creating greater harmony both within the school and between home and school. Though belief systems will vary it is important that parents understand the principles underpinning the school's personal education programme. The outcome should not be one of acrimony, implied criticism or culture clash. Rather it should foster better mutual understanding, greater tolerance of differences and more consideration for our fellow men and pupils.

PROPOSED MODEL FOR HEALTH EDUCATION

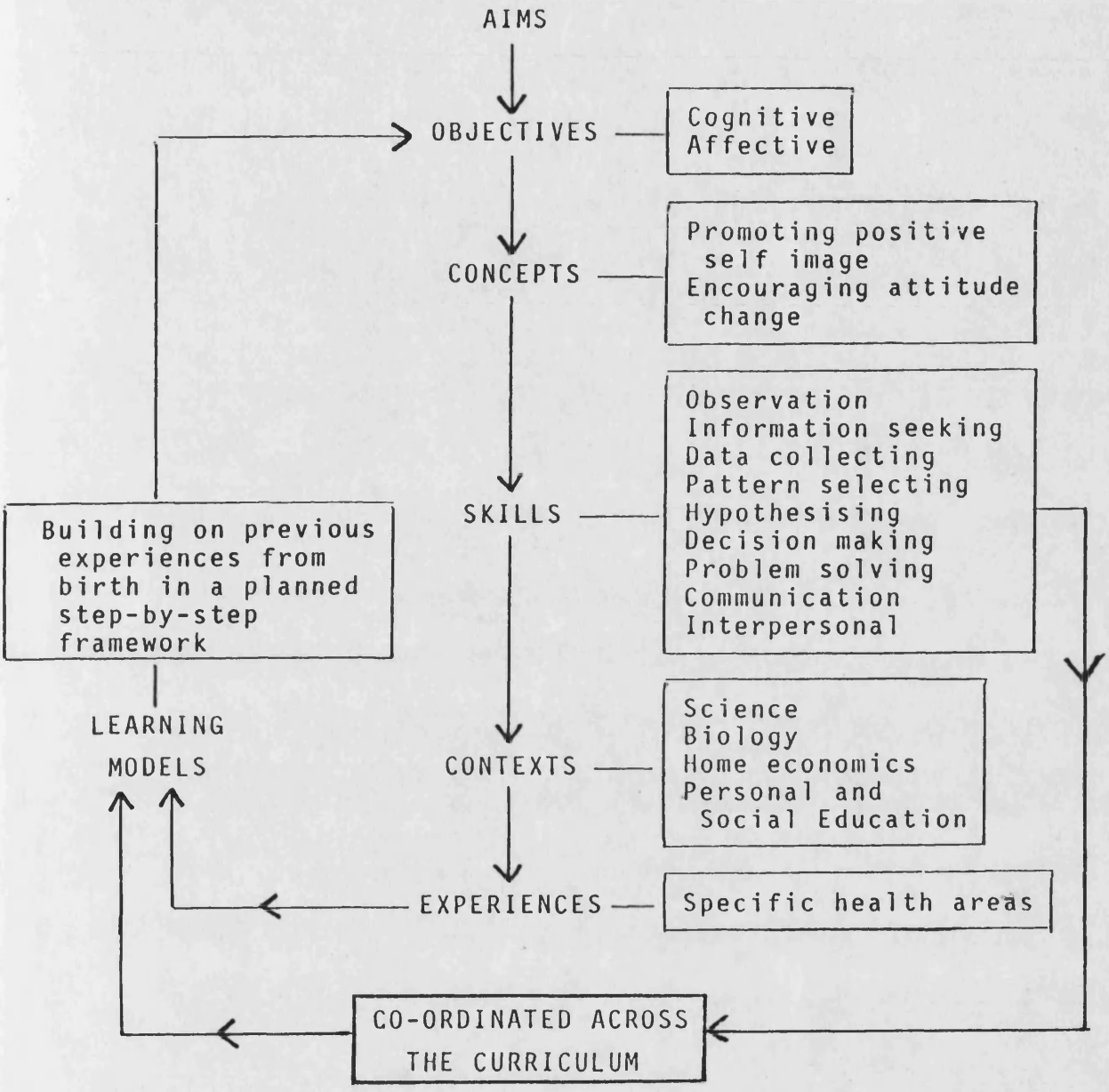

Figure 1

CHAPTER TWO

VISIONS OF HEALTH

2.1 INTRODUCTION

Throughout time people have struggled for survival. In their efforts to achieve the necessities of life, they soon realised that they had to achieve and maintain a specific level of well-being. Therefore, in almost every culture, health was, and is, a cherished goal. Unfortunately, health has often been, and still is, viewed by many people simply as the absence of an obvious ailment. Specifically this view may appear to be sound but closer scrutiny reveals more complexities. Is good health only to be measured in physical terms? Can a physically sound person be considered healthy? Today health is viewed as more than the absence of disease or disability. It is a positive, creative force encompassing a variety of factors. These factors include social, emotional, spiritual, mental and cultural components as well as a physical dimension.

2.2 PERCEPTIONS AND DEFINITIONS

The word "health" is derived from the Anglo-Saxon word "haelth" meaning safe, sound or whole. In a number of languages health and wholeness are etymologically linked. Early humans thought of health as synonymous with human well-being. Such words as balance, whole and harmony are used to express this concept. Sorochon and Bender have developed a historical summary chart (Figure 1) of the many meanings and interpretations humans have given to health. These definitions reflect the social events of the time in which they were developed. Thus early humans were primarily concerned with survival and freedom

from hunger. The desire for soundness and safety in the Middle Ages was rather more sophisticated. Such a desire was the natural response of people faced with the ravages of starvation, disease and war. The tremendous number of recruits declared ineligible for military service, on physical grounds, for the Boer War gave rise to the School Health Service and fostered the view of health in terms of fitness.

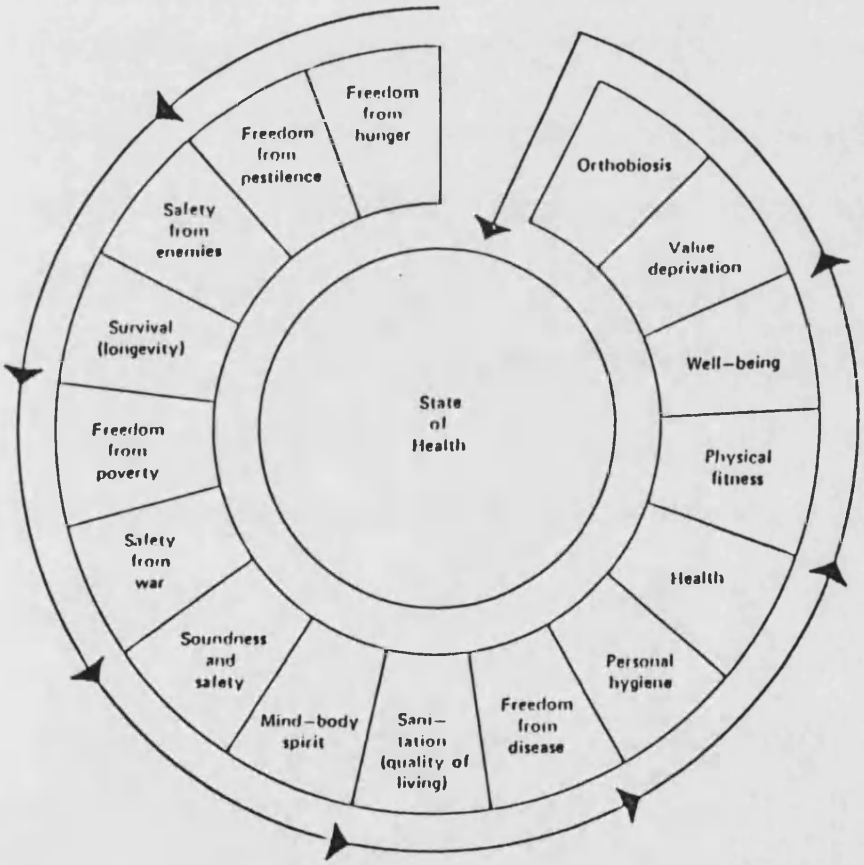

Figure 1

Sorochon and Bender 1975

Only a brief glimpse can be taken of these perceptions of health throughout the ages due to the range and depth of them, each being a story in itself.

The ancient Greeks believed in the existence of happy races, virtuous and vigorous. According to their legends the Scythians in the north and the Ethiopians in the south lived exempt from toil and warfare, from disease and old age, in everlasting bliss. Hygeia, the Goddess of Health, watched over the health of Athens. From the fifth century B.C. on, her cult progressively gave way to that of the healing God, Asclepius, whose acclaim was for warding off disease or helping men recover their health. The myths of Hygeia and Asclepius symbolise well the conflicting ideologies. For worshippers of Hygeia, health was the natural order of things, a positive attribute acquired by those governing their lives wisely. In contrast, the followers of Asclepius emphasised the restoration of health caused by accidents of birth or of life.

Hippocrates taught that both health and disease are under the control of natural laws and reflect the influence exerted by the environment and lifestyle. Accordingly health depends upon a state of equilibrium being maintained between the various internal systems which govern the operations of the body and mind. A second state of equilibrium is then necessary for man to live in harmony with his external environment. His writings are pervaded with the concept that the life of the patient as a whole is implicated in the disease process and that the cause is to be found in a combination of circumstances rather than in the simple direct effect of some external agent.

The doctrine of specific aetiology of disease, following the work of Pasteur, Koch and others, caused a radical rethink of health in terms of external agents and their effect upon bodily functioning. Alongside their developments came the Public Health Movement spearheaded by reformers such as Chadwick and Southwood-Smith. Recognising a connection between environmental conditions and disease, the Movement, primarily through legislative measures, improved conditions to such an extent that disease was contained and in some cases eliminated. Though improvements in nutrition and the evolution of less virulent strains of certain organisms were contributory factors there is no doubting the significance of public health reform for the health of the nation.

These thoughts however relate to the effect upon health without necessarily defining just what the concept involves. Early definitions revolved totally around the physical dimension of body functions or absence of disease. They all referred to health as a "condition", taking no account of its variable quality within or between individuals. They implied that there was a precise boundary separating out the respective conditions of "health" and "ill health".

The first attempt to rectify these limitations came in 1947 when the World Health Organisation defined health as:

> "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"
>
> WHO 1947

This broadens the view of health by incorporating dimensions other than the physical but does not take account of fluctuation in health

status within any given individual from time to time. No help is given with the assessment of the various dimensions now included in the definition. Finally it fails to consider the relationship of health to the quality of life.

As early as 1930 Jesse Williams perceived health as:

> "the condition which permits optimal functioning of the individual enabling him to live most and to serve best in personal and social relationships. It is of value to think of health as that condition of the individual which makes possible the highest enjoyment of life, the greatest constructive work and that shows itself in the best service to the world"

The notion of "optimal functioning" was a significant factor in introducing the idea that within personal limitations (e.g. physical handicap) one could still lead a fuller and healthier life than an able bodied person not fulfilling his potential. To relate health to the quality of life was also a dramatic departure from previous definitions. It de-emphasised length of life as the major criterion of health. The number of years an individual lives has relatively little to do with leading a full and productive life. The idea was revitalised by Bauer in the mid-1960s when he stated that health is:

> "that condition of the human organism that permits one to live happily and successfully. It favours efficiency and helps towards attaining the goals and ambitions of life"

In 1963 the President of the United States' Commission on the Health Needs of the Nation recognised the various levels of health:

> "implicit in the expression 'promotion of health' is the idea that there are gradations of health, that everyone not affected by a specific disease or disability is not equally healthy"

The Commission's Report further stated:

> "health is not a condition: it is an adjustment. It is not a state but a process. It is through this process that humans adjust to their environment"

This perception of health is closely associated with that of Dubos (1959) who sees health as a type of adaptation:

> "health fundamentally, is a function of adjustment; under natural conditions organisms that have survived were always effectively adjusted to their environment. Though man will continue to adjust to his environment and make steady advances towards higher levels of health, he will discover that it is a goal which can never really be achieved"

To Dubos therefore health involved a process of adaptation to, and equilibrium with, the demands of the environment. Since, however, these demands are constantly changing Dubos considers that perfect health is not possible:

> "perfect and positive health is a utopian creature of the human mind. It can never be reached because man will never be so perfectly adapted to his environment that his life will not involve struggle, failure and suffering"

The philosophy of Dubos has been further developed by other scholars to incorporate the notion of fulfilment of personal potential. Dunn (1961) in particular emphasised this point and consequently perceived handicapped people as being able to achieve high levels of health within the constraints of their handicap. He used the phrase "peak wellness" to refer to that goal which the individual reaches when his capabilites are used optimally in one form or another.

The concept of living for something beyond survival can be closely associated with Maslow's (1954) theory of human motivation involving a hierarchy of needs. This moves from basic physiological needs, through recognition, love and affection, towards esteem and finally

self-actualisation. Maslow used this latter term to refer to the desire to become "what one is capable of becoming", truly self-fulfilled.

In summary, therefore, health is both a relative and abstract term possessing emotional, spiritual, social, mental and physical components. Well-being is the outcome of a constellation of circumstances. The sum total of all the factors (ORTHOBIOSIS) that will invariably influence health, both positively and negatively, should be looked upon as ecological variables since our health is in constant interplay with them. Because it is a dynamic process, health must be continually pursued, not as an end in itself, but as a means to living a fuller, richer life.

2.3 MODELS OF HEALTH

The preceding section described how health has been defined and perceived by writers and organisations of distinction. Though somewhat personal in origin the various concepts reveal a pattern of increasing recognition for the many factors which interplay and acknowledge that health is life itself with no specific parameters. A number of models may be identified as a means of summarising, and reflecting, the various ideologies currently in existence. They also demonstrate quite clearly how this concept of "health" pervades all levels of society from national (even international) policy to personal decision-making.

2.3.1. The Medical Model

This model of health has ruled almost supreme during this century since it is based upon the germ theory of disease and has been shown to be effective in the control and elimination of disease. In brief, the human being has been viewed as something of a machine. Scant regard has been paid to the environment other than as a source of pathogenic organisms which can cause the machine to malfunction. The model has been politically popular since it promotes self reliance and acceptance of personal responsibility for good health. Unfortunately with this approach the weak and underprivileged often stay that way! The model is also attractive to policy makers insofar as it is viewed as cheap relative to the inflationary costs of curative medicine whilst also being perceived as a means of saving on such costs.

The model naively assumes that information in itself will lead to "appropriate" action being taken. Anyone not responding is considered foolish, irresponsible, feckless or not deserving of good health. It does not understand the theory of social learning nor acknowledge the psychological needs of people. The model, in some ways, is a remnant of days past when people lived by prescribed regulations, "knew their place", respected their superiors and appreciated what they had. It is consistent with the Protestant Work Ethic and ideology of "cleanliness being next to Godliness".

Let no one underestimate how quickly disease can break out where standards suddenly drop or conditions change rapidly as in circumstances such as an earthquake. However this has much to do with poverty, low health status, inadequate sanitation and restoration of

order. In such a situation, akin to 19th Century Britain, the medical model is supreme. In the latter part of the 20th Century in Britain the model is somewhat obsolete.

2.3.2. The Environmental Model

This is associated with the previous model in that the germ theory of disease involves and therefore links them. The environmental model is based upon a philosophy which believes that people will not improve their own environment, it has to be done for them by compulsory use of legislation. It is political insofar as it recognises a resistance to change or action by organisations with a vested interest in retaining the existing environment, such as with industrial pollution.

Again originating in the mid-19th Century as a response to epidemics (e.g. cholera), the movement owes much to reformers such as Chadwick, Kay Shuttleworth and Rowntree, who saw the effects of living and working upon the lower socio-economic groups. These were people with a deep social conscience who recognised the devastating effect of the environment upon health and thereby instigated the great public health reform from 1848 onwards. This movement undoubtedly made the major contribution to the increase in health status of the general population during the latter part of the 19th Century. It has given rise to a permanent statutory service in local government, monitoring environmental health hazards and ensuring that an adequate physical environment is retained conducive to the promotion of good health.

2.3.3. The Ecological Model

Whereas the previous model focused upon the physical environment this model takes a broader perspective in relating human activity to the wider life cycle of planet Earth. Its supporters are clearly concerned with the balance of Nature, particularly where man's exploitation of natural resources and other species is apparent. With specific reference to health matters this model perceives health as being a dynamic process of equilibrium between man and his total environment in a truly eclectic relationship.

The philosophy of Dubos has already been described within this theoretical framework (2.2.). Hoyman's (1965) ecological model is a comprehensive and well structured paradigm of health and well-being. Hoyman sees health as optimal personal fitness for a fruitful and creative life. He contends that since health is a process and not a condition it is subject to change. Though acknowledging the role played by environment it recognises other forces too, namely the individual's genetic endowment, personal experiences and personality, as being determinants of health. Equally the model accepts four components of health, these being mental, spiritual, social and physical. It is called an ecological model because there is a constant interaction between the components and determinants of health.

A misconception of advocates of this model is that they are cranks of the "back to Nature" group. This is not so, for it is quite possible to obtain a balance between the benefits of modern life (e.g. electricity, food freezers) whilst still retaining great respect for

the natural world and accepting responsibility for the effects of personal actions upon it. The model sees health as enabling man to live the kind of life and strive towards the goals that he sets for life. Again it demonstrates the significance of the quality of life rather than longlevity in itself:

> "Clearly survival is not enough; that is people must not be satisfied with just living longer. They must want health as a means of living a full life and striving towards goals that they set for themselves. They must search for some deep unifying meaning to their lives, not merely existing or surviving."
>
> Galli (1978)

2.3.4. The Political Model

This model arises from a recognition of the immense effect that political will and policy has on the nation's health. This is particularly so where a centralist government is elected or moves towards such a position during its administration. Such control enables a social structure to be created which may or may not be conducive to the health of people. Of course such policy development does not occur in a vacuum but emanates from political ideology. A government strongly believing in self-reliance and individual responsibility for health is less likely to accept its own role in creating a healthier world than one not laying such stress on the role of the individual.

The political model is closely associated with the environmental model in recognising the effect of factors such as housing, clean air, proper sanitation and water supply. The early medical officers from 1850 onwards showed a sensitive awareness of these variables' links with ill health. This political model however goes further by

incorporating the effects of economic policy (e.g. pensions, supplementary benefits) on the lower income groups or subsidies for the agricultural industry to produce food not conducive to good health (e.g. dairy produce). It emphasises the effect of unemployment on health (Brenner 1979) and in general relates disadvantage to political policy and in turn to ill health.

The best known summary of this model is that of the Black Report (1980) "Inequalities in Health" which clearly demonstrated the causal relationship between poverty, social class and ill health. Almost every indicator of health showed a negative correlation between the lower social classes and good health. The Report made major recommendations aimed at resolving the source of the problems deeply rooted in housing, economics, employment and social policy. Unfortunately however the Secretary of State responded by stating that the government could not endorse its proposals, effectively shelving the document during this government's present term.

Any consideration of this model must be accompanied by a view of politics in action. Priorities of retaining power, accommodating political support groups, pursuing economic policies and security strategies may come far ahead of the welfare of the individual. Any influence to the contrary may be reconciled by reverting to basic philosophy of responsibility for self. In this way deprivation continues to be transmitted from generation to generation. Exceptionally the system will be beaten by gifted members of the deprived group. Normally however the members will be blamed for not "improving their lot". The term "victim-blaming" was coined by Navarro (1976) who states:

> "this approach is acceptable to a capitalist society since it poses no real threat to the social system. Rather than weakening it strengthens the basic tenets of bourgeois individualism .... far from being a threat to the power structure, this lifestyle politics complements and is easily co-optable by the controllers of the system".

Whilst many would accept that the state should not dominate people's lives it is clear that government policy in many areas does affect to a great extent, for good or bad, the quality of people's lives. Given the unlikelihood of any major transfer of power to local communities it does behove the government to accept responsibility for its policies on individuals, particularly those less able to thrive without help. This model clearly recognises the notion of health in political terms, whether the gauntlet is to be taken up remains to be seen.

2.3.5. The Social-Psychological Model

This model is based upon a recognition that the desire for social approval is a very powerful force in influencing people's behaviour in general including that related to health in a specific or broad sense.

Social learning theory has clearly demonstrated how beliefs are acquired during primary socialisation in particular and also later from fellow workers or significant others (in marriage for instance) with whom people come into contact. Behaviour is "transmitted" by processes of imitation, modelling (Bandura 1974) and finally internalisation as a result of similar social interaction.

Health therefore may be socially defined and relate to national, local or cultural norms. Behaviour construed as maladjusted or totally unacceptable by British standard may lead to compulsory detention

under the Mental Health Act 1959. The individual will be defined as being mentally ill and treated accordingly. Yet similar behaviour in another culture may be quite acceptable and the person regarded as perfectly normal.

Both formal norms (legal) and informal norms (expectations, tradition, convention) exert great influence and power over people's beliefs and behaviour. Seat belt legislation for instance has led to the widespread practice of wearing the required equipment. Improved labelling on food produce appears to be creating greater demand for foods without certain additives. This macro level of social control is very much a government responsibility though pressure groups clearly influence the political will for reform.

At the micro level there is evidence of the way in which group and cultural norms serve to affect personal behaviour. Asch (1956) showed how individuals conform to peer group pressures even in contradiction of their own observations. Merton (1957) gave plausible explanations for the influence of reference groups in terms of fulfilment of psychological needs such as recognition and status.

Social learning theory is discussed more fully in the following section. At this stage the important point is that health-related behaviour is influenced by the same social forces as other daily activities. Exactly the same type of sanction such as displeasure, rejection, humiliation, castigation or intimidation is imposed upon those not prepared to conform to convention or norms. It is in this way that a social-psychological model of health can be clearly identified.

2.3.6. The Personal Development Model

In this model the focus is very much upon the individual in terms of growth towards independent and responsible adulthood. This is closely associated with Dubos' and Dunn's notion regarding the realisation of individual potential in people, helping them to become all that they are capable of becoming.

Many other writers, notably Rogers (1961), have stressed the importance of personal skills and attributes in this process of growth. Lifeskills programmes such as that of Hopson (1981) have reinforced these principles and developed exercises and experiences deliberately designed to promote skills such as decision-making, assertiveness, esteem and personal relationships.

The term "self-empowerment" was coined by Hopson to reflect the net result of an individual adding these characteristics to his personality. In particular the empowered person would possess self-esteem, an ability to defer gratification and an internal locus of control. The major objectives of such a programme would be to facilitate genuine choice and decision-making by removing personal or social barriers and providing relevant skills to empower the individual.

Though focusing on each person the programme nonetheless enables community action to be undertaken by like-minded people working together for change of adverse social conditions or an unhealthy environment. Whilst desire for reform may always have existed the new-found confidence and interactive skills may be a crucial factor in translating passive concern into effective action. The Women's

Movement is a good example of new expectations being harnessed to raised levels of confidence in the pursuit of greater justice and opportunity for all.

If health therefore is about the fulfilment of capabilities a proper environment is essential in a physical, social and emotional sense. The attraction of this model is that it operates to affect both the individual and wider community. It gives inner strength to people to determine the course of their own destiny, realise their potential and thereby live rich and satisfying lives.

2.3.7 The Community Development Model

Along with an appreciation of the social origins of disease and disability there has developed a conviction that the community must be encouraged to articulate its needs and take action to meet them. This is not merely the view of individual radicals, it is the agreed policy of the World Health Organisation (1981). As O'Neill (1983) says:

> "this gives the people a new political role - not just a vote in parliamentary elections but regular, direct involvement in the decision-making process. The community must act as a force for change in local and national government throughout every sector of public life."

However a substantial problem exists for if it is unlikely that disadvantaged people can make decisions about personal health, it is no more likely that they will have the confidence and skills for taking such community based action. This approach, or model, must therefore be viewed in conjunction with the personal development model, the major difference being the application of newly acquired personal skills to wider issues collectively by groups of empowered

people. The process of conscientization raises people's awareness about the effect of their environment upon the quality of their lives and stimulates resolution for bringing about change for the greater good.

It is impossible, of course, to divorce these considerations from politics since the major social systems such as employment, housing, planning, education and health services arise from political policy. Paramount in this debate is the fact that by almost any criterion of health, social class is the major factor consistently associated with excellence as social class rises.

The Health Service has been criticised for paying insufficient attention to the views and felt needs of its consumers, the general public. Though Community Health Councils are the official representative of the "consumer" it would be fair to state, in my experience, that they have had relatively little influence generally over major decisions such as development of services.

Consumerism is now becoming recognised as an integral component of the planning cycle in the Health Service. Courses are being provided for senior managers by the NHS Training Authority and institutions such as the Kings Fund. To complement this development local populations are beginning to operate collectively in pursuit of what they need. Leaders are emerging to present their case to appropriate sources, to enlist significant individuals (such as councillors, MPs) to promote the issue through the local media and to take any direct initiatives as may be considered necessary.

There are severe limitations that this model may have over national policy, for instance, to employment. Nonetheless great scope exists

for influencing local decisions which still affect the quality of people's lives in a very real way. Additional pedestrian crossings or better nursery facilities are examples of such progress.

The community development model of health is about self-help, leadership and collective action. It must not be used as a manipulative device by powerful individuals or bodies claiming consultation processes to have been honoured but pursuing pre-determined policies all the time. It is about permitting a wider populace to become sufficiently empowered by legitimate means to exert locus of control over their lives.

2.3.8 The Holistic Model

Holism denotes wholeness both in the sense of soundness and the totality of a person's existence. It arises from Eastern philosophy which recognises man as being more than a collection of systems, as having a collective entity above and beyond individual body components. In Chinese medicine this philosophy led to emphasis upon developing and maintaining the total being rather than any concentration upon specific bodily functions. This was particularly so where symptoms of ill health were presented. Whereas western medicine tends to focus upon the particular ailment or symptom, holistic medicine looks at the person behind the condition including the physical and social environment. It is concerned with providing an external 'culture' conducive to optimal well-being and an inner blend of body systems into a whole being. This latter notion is similar in some ways to the concept of homeostasis, being concerned with balance across physical, social and emotional dimensions rather than merely physiological activity.

The holistic model of health clearly relates to other models such as the ecological and the notions of health expressed by Dubos and Dunn. There are some similarities also with Selye's stress theory of disease which sees ill health as an outcome of stressors upsetting the body's state of equilibrium or as an inability of the body to adapt to new demands being made upon it.

This model makes the case for health being seen as a balance of physical, social and emotional activity. Thus a well trained athlete may still be perceived as unhealthy if unable to cope with psychological pressures or if having difficulties in establishing coveted personal relationships. Equally the contented person in control of the demands of daily life may be very overweight and prone to certain forms of ill health. Perhaps the focus of attention turns again to the idea of a well-rounded person, not seeking the extremes of belief or behaviour, striving to keep conflicting demands in perspective, accepting responsibilities to self and others, enjoying satisfactory relationships and experiencing a feeling of inner peace. The holistic model of health would seem well suited to the needs of life in the modern day.

In Conclusion

Models of health are an important consideration as their acceptance by various groups can greatly influence the course of life events. At national level government policy may pursue programmes which allocate resources in a particular direction. Services may or may not be provided in areas of need unless consumers articulate their desires strongly enough through appropriate channels of communication.

Socioeconomic policy may be implemented with little or no regard for the health implications of decisions to subsidise certain industries or products.

Individuals may only choose to work collectively if their awareness is raised of the causes of ill health over which it is possible to exert influence and some measure of control. Models of health therefore can be extremely valuable in guiding thought and action processes at many societal levels, hopefully promoting good health as a result.

2.4 INFLUENCES ON HEALTH STATUS

Previous sections have drawn attention to the many interpretations that can, and are, applied to provide an understanding of health. They are by no means mutually exclusive but serve to reinforce the multi-dimensional nature of life, and health. Given this perspective it is equally valid to claim that many factors can affect health both at the macro and micro level. A number of major variables which influence health are discussed in this section.

2.4.1 Heredity

Considerable evidence of genetic links with disease and conditions such as handicap have been found in recent years. Though many people remain as carriers and therefore show no obvious symptoms the role of heredity is still clearly implicated. Even with modern behavioural diseases such as coronary heart disease and cancer heredity has been shown to be important in creating a susceptibility to the disease, given appropriate behaviour on the part of the individual. Though high salt intake, for instance, may not automatically cause raised

blood pressure, it does in those people whose constitution cannot metabolise it easily. Heredity acts in many other ways to lay down specific boundaries of personal development though the individual may still achieve an optimal state of health within such parameters.

2.4.2 Social Class

In almost every indicator of health status the main associated factor is that of social class. The higher the state of good health represented by the indicator the lower the likelihood of its attainment by social class 4 and 5. Even the myth of the company director being more prone to heart attack than the workforce has been well exposed by research (Royal College of Physicians, 1976) demonstrating the reverse situation as being the case.

Social class is in itself associated with a range of deprivations such as low income, poverty, poor housing and unemployment. Navarro (1976) coined the phrase 'learned helplessness' to refer to the way in which such groups acquire a powerless and helpless consciousness leading to apathy, pessimism and almost total dependence upon the actions of the state. The infant mortality rates are up to thirty times higher in deprived groups than higher social classes. Brenner (1976) has shown the devastating effects of unemployment upon the quality of life leading to increased incidence of suicide, murder, mental illness, general ill health, alcoholism and violence in the family. Though unemployment is not confined to the unskilled manual workforce it is usually more prevalent with a subsequent deleterious effect upon health. Brenner also demonstrated a negative relationship between income level and mortality rate for virtually every cause of death.

The term "inverse care law" explains the rather perverse development where medical care tends to be least available to those in most urgent need and most available to those with least need. The ratio of doctors per population for instance may vary from 1 : 2000 in affluent southern regions to 1 : 12000 in deprived northern areas. Uptake of services also is strongly biased against those in low states of health. Use of dentists, immunisation services and cervical cytology, are all greater in higher social classes. The unfortunate truism is that "the higher you are up the social scale the more use you make of the NHS and other support services".

2.4.3 Socialisation

There is little doubt that the process of socialisation exerts powerful control over the beliefs and behaviour adopted by cultural groups. Through imitation, modelling, identification, and internalisation, the dominant norms and conventions are passed on to each new member. Health-related beliefs and behaviour are no exception and they too are subject to the process, reflecting basic ideological principles. Where fatalism is the prevailing norm little preventive health practices will exist. On the other hand a general agreement on the value of assertiveness will probably lead to more demand for services, more criticism of services received or more information being sought in matters of health.

The process of socialisation is dynamic and does lead to change in the individual, usually as a result of new friendship groups, relationships and felt personal needs. The influence of new colleagues at work may sensitise a recruit to the value of safety

practices, the birth of a son may bring a greater valuation of immunisation whilst the onset of ageing in a parent may raise awareness of heat conservation in the home. In all such ways health is affected, arising from the social interaction of people living in close harmony, bringing comfort and a collective identity, but simultaneously transmitting set codes of health beliefs and behaviour.

2.4.4. Personality

This is clearly associated with heredity and socialisation but may still be identified as a separate variable affecting health status. Rosenmann and Friedmann (1959) demonstrated an increased likelihood of coronary heart disease in Type A personalities - those having a strong drive for achievement, undue sense of time urgency, being aggressive, unable to relax easily and constantly under pressure to reach objectives. Evidence (e.g. Hill, 1977 and Byrne, 1961) has accrued showing a relationship between personality and cancer. Those regarded as repressers react passively and almost fatalistically to symptoms of early cancerous states. The outcome for this group is much lower, in terms of survival, than for those (sensitizers) choosing to actively fight the condition with optimism.

The attitude of mind is important in other ways in combatting infection. Research at Porton Down has demonstrated that the one consistent predisposing factor to infection from the common cold is that of personal depression. One's own definition of the sick role often helps or hinders reaction to minor ill health. The person who seeks a sensible but early return to normality often aids the recovery process.

Personality is also instrumental in determining behaviour such as that of risk-taking or pursuit of new experiences. Clearly bound up with interpersonal relationships it is the confident person who will resist, when so wishing, and the less confident person who will be vulnerable to the influence of others even where health is severely threatened by action. Such is the power of the requirement to satisfy personal needs (Maslow, 1954) that health hazards are fully accepted as a risk well worth taking. Becker's Health Belief Model (Figure 2) illustrates the various factors associated with personality, previous experience and social context which interact to influence health-related beliefs.

2.4.5. The Environment

The role of the environment in promoting health was discussed earlier (section 2.3.2) in some detail. It was shown that environmental reform in the late nineteenth and early twentieth century was probably the major cause of the improvement in the nation's health. However change is constant and brings with it fresh challenge and health problems. The change from horse drawn transport greatly reduced the death rate from gastro-enteritis in babies, spread by flies flourishing on horse manure. The emergence of motor vehicles however brought with it a huge annual toll of death requiring legislation and enforcement.

The concept of "the environment" can also incorporate a social dimension, a significant consideration, for instance, in town planning and housing design. The benefits of "gemeinschaft", community spirit and identity, have been destroyed or disregarded in urban renewal and

redevelopment programmes at great personal cost to the community. Those with delegated power for shaping the environment have great responsibility for ensuring that people's physical, social and emotional needs are taken fully into account when coming to their decisions.

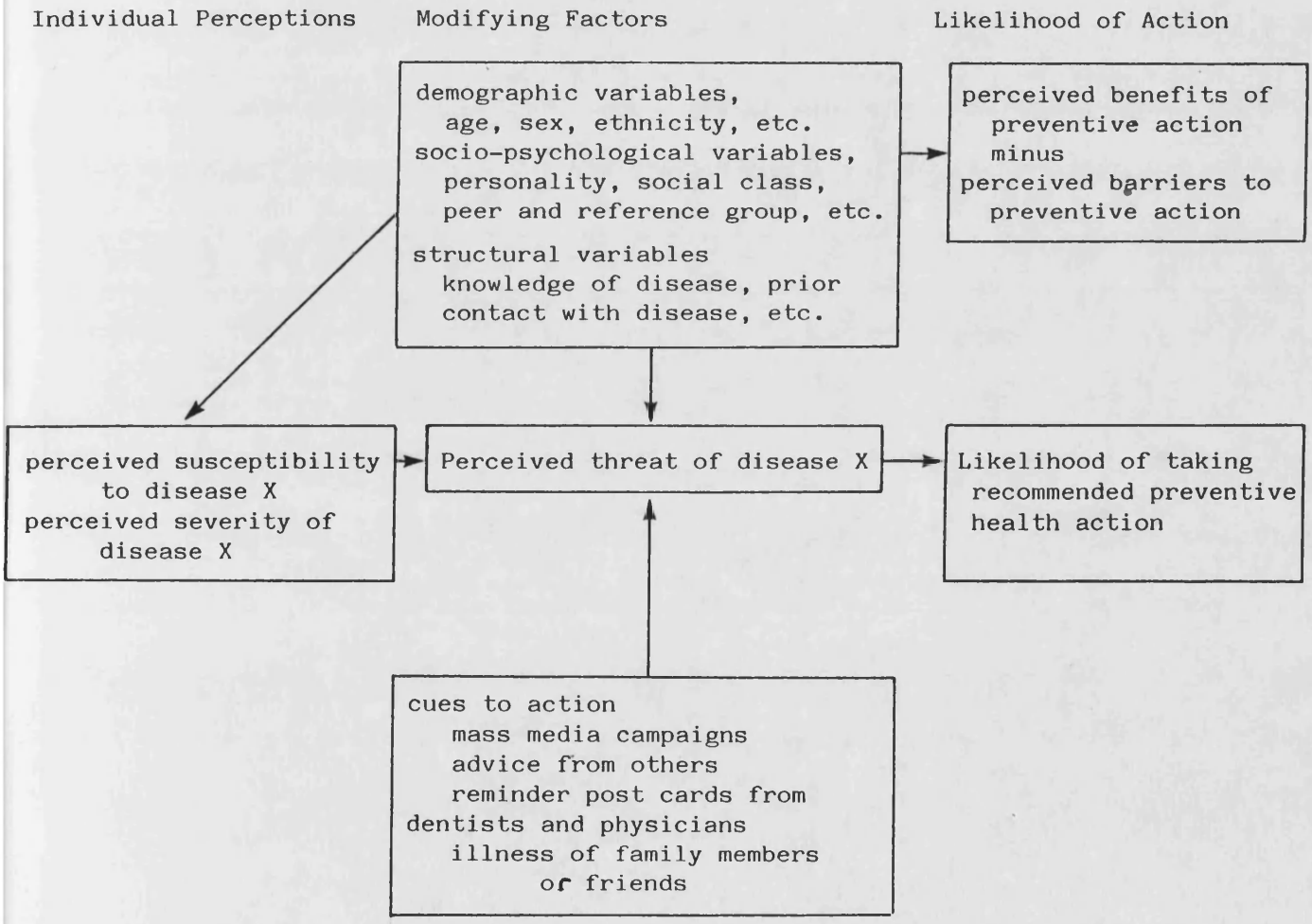

Figure 2 Health belief model

Becker 1974

2.4.6. Socioeconomic Policy

There is general agreement that social conditions such as poverty, poor housing and unemployment are associated with low or ill health. Equally the economics of food, leisure pursuits, private housing and living standards militate against the less well-off in our society. The contentious issue is the extent to which political policy can, and should, seek to intervene in these processes to help everyone to attain acceptable standards of health. Whilst some claim that market forces should be allowed to prevail others argue that governments should seek to direct the course of events where possible.

If health is regarded as a major outcome of policy development then governments could, given the will, act in many ways conducive to the attainment of such a goal. Improvements in nursery education, benefits for the elderly, the creation of permanent employment; subsidies on healthy food; bans on tobacco advertising; and fluoridation of water supplies would improve levels of health quite considerably. Above all should be the abolition of poverty by modifying the present distribution of wealth in some way other than through the traditional employment process. National political policy is able to take such an interventionist approach in the promotion of "health for all" whilst still retaining and respecting individual autonomy, freedom and self-reliance.

2.4.7. The Media

Though the mass media is criticised frequently for its content and presentation there is very little evidence to show a lasting impact upon people's beliefs and behaviour related to health. Research has tended to suggest that the media is used by people to reinforce existing beliefs rather than lead to significant change. Publicity can certainly raise awareness of issues and create a response but as Live Aid has shown, the impetus has to be sustained through an ongoing programme of events.

In the field of health the media has produced huge uptake of demand for material (e.g. to help give up smoking) whilst consumer demand has grown from campaigns for safety practices (.e.g child resistant containers for household cleaners). The media should be used to complement other health promoting initiatives rather than be used in isolation. Its power of reinforcement should be recognised and employed to maximum advantage whilst also acknowledging its limitations. Never has such an immediate and extensive source of communication been available as that of present day radio and television. Health can undoubtedly be greatly enhanced by harnessing this source of influence into the wider programme which must continue to operate in our society.

2.5 RESPONSIBILITY FOR HEALTH

In many ways the issue of "responsibility for health" needs to be considered in consort with ideas of perceptions and influences upon health. Since however there are many sides to health, operating at various societal levels, it follows that responsibility for its promotion too must be shared by a range of agents.

The first aim of the National Health Service Act 1946 was "to promote the health of the people". It is clearly therefore the duty of the Secretary of State, the Department of Health and Social Security, Health Authorities and many professional groups to accept responsibility for the health of the nation. Unfortunately the focus has always been predominantly upon the effects of ill health and its treatment rather than causation whether at an organisational, environmental or individual level. Equally, benefits and entitlements have fluctuated according to political ideology which has major 'party' differences regarding issues such as self-reliance, autonomy and state intervention.

2.5.1. The Government has demonstrated its acceptance of responsibility in legal reform such as seat belt legislation, Health and Safety at Work and consumer protection. Very few other examples can be cited of the legislative mechanism being used in new ways in recent years to promote good health. Much legal control of environmental health has, of course, been statutory for many years but there has been some reluctance to use this method by the present political administration. Local government too is actively involved in the process of providing a healthy environment by statute and therefore carries out its responsibilities required by law.

2.5.2. What therefore should the individual be expected to do for himself to remain healthy? There does seem to be a case for expecting people to take action within their personal resources to look after their own health. Self-care in terms of hygiene and safety practices are two obvious examples. Simply ignoring risks through lethargy is no excuse when by so doing it increases the likelihood of ill health.

Ideally people should also accept a responsibility for the immediate environment in their community and seek to ensure that it is conducive to good health. In many cases however people have neither the personal skills nor confidence to tackle such issues and certainly not the power to bring about such change as may be necessary.

The philosophy of "self-help" became very popular politically in the 1970's with the increasing recognition of the behavioural basis of modern health problems and the failure of curative medicine to respond effectively. Self-help was seen explicitly in politics as a way of saving public expenditure as well as diverting responsibility from the state to the individual. The publication "Prevention and Health: Everybody's Business" (1976) stated

> "A great battle had been won, and at first sight victory seems complete, but a second look shows a different picture. More people can expect to live longer than in previous generations, but many still die prematurely or are for many years of their life dogged by avoidable ill health ..... We all need to be more aware of how we can help ourselves, our families and the community as a whole to avoid illness and its consequences."
>
> DHSS 1976

If all this had simply been a money-saving ploy the new thinking may well have raised only temporary attention. The ideology however appealed to many people critical of modern high technology and pharmaceutical medicine. It also coincided with a resurgence of interest in physical fitness, self-care and community support groups. People were becoming increasingly interested in knowing more about their own bodies and deciding for themselves how to resolve their health care problems. The Women's Movement for instance responded to its growing criticism of medical inadequacy by self-learning and

organised pressure for improved health services. Other groups such as resident associations, pensioners, the handicapped and ethnic minorities followed a similar pathway to enable progress to be made. Of late the trend for consumerism is intensifying, so ensuring that people are consulted, as of right, in identifying their own health needs and how these can best be met through service development.

2.5.3. Parents clearly must accept considerable responsibility for their children's health and general well-being. By providing the optimal living standard children will be encouraged to thrive, by teaching about hazards children will become safety conscious, by seeking immunisation children will be protected and by setting good examples children will acquire healthy habits. A good summary of the role of parents in discharging their responsibilities is contained in the following publication from the Scottish Health Education Group:

If

a child lives with criticism,
she learns to condemn.

If

a child lives with hostility,
he learns to fight.

If

a child lives with ridicule,
she learns to be shy.

If

a child lives with shame,
he learns to feel guilt.

If

a child lives with tolerance,
she learns to be patient.

If

a child lives with encouragement,
he learns confidence.

If

a child lives with praise,
she learns to appreciate.

If

a child lives with fairness,
he learns justice.

If

a child lives with security,
she learns to have faith.

If

a child lives with approval,
he learns to like himself.

If

a child lives with acceptance,
and friendship, he or she learns
to find love in the world.

The quotation is also relevant to the process of socialisation discussed earlier in section 2.4.3.

2.5.4. Schools undoubtedly have a responsibility for the health of pupils and staff. As a social organisation there is considerable evidence from many studies (e.g. Rutter, 1979) that schools influence beliefs and behaviour. Impressionable young people will identify with certain members of staff who therefore should accept responsibiity for the effects of their actions. Equally the employing authority has a responsibility for providing a healthy school environment and appropriate help for its employees. Dunham (1984) has identified high levels of stress in teachers which require a proper occupational health or support service to be provided. The hidden curriculum and

general tone of the school, together with its procedures and practices, should all be integrated into producing a caring and safe environment conducive to the highest ideals of health.

2.5.5. A recurrent theme in debates on responsibilities is that of personal freedom. It is claimed by many that they have the right to risk their own personal health in whatever way they so wish. This would seem a reasonable contention in those situations where no-one else is affected by the exercise of such personal freedom. However it is extremely difficult in modern society to behave in total isolation from other people. The person driving recklessly, the adventurer not having taken adequate precautions, the smoker causing fellow workers to inhale cancer producing substances all put the health of others at risk as a consequence of their actions. It seems reasonable therefore to expect people to consider the effects of their behaviour, and thus accept responsibility for it, on others.

In a similar vein the collective good on occasions takes precedence over personal freedom and thus curtails it. Fluoridation of water supplies, clean air legislation and compulsory use of seat belts illustrate this requirement in modern society. Such restrictions on personal freedom have always operated in organised cultures and brought order to what would otherwise have been anomie. There are dangers in pursuing such policies to the extreme for man needs a sense of independence and free spirit. However it must be tempered with a responsibility for the collective good which, of necessity, requires certain restrictions on personal liberty to be enacted both on a voluntary and involuntary basis.

2.5.6. This chapter has sought to consider the role of individuals, parents, organisations and the government in accepting responsibility for health. There are good grounds for claiming, in my view, that this responsibility should be shared by the various bodies identified. Some causes of ill health however are not the subject of individual choice. The mother whose child falls out of a tower block window may well have been pressing for rehousing. The man who contracts mesothelioma may not have been told by his employer that the particular type of asbestos in use was a health risk. The content of the air we breathe, working conditions, housing standards and sources of stress are often beyond individual control. These have to be tackled through the collective action and political mechanisms discussed in earlier sections.

Some matters of personal health however do remain within one's personal span of control and it is to this issue that we now turn.

2.6 HEALTH LOCUS OF CONTROL

2.6.1. Introduction

The concept of LOCUS OF CONTROL may be summarised as the degree to which people believe that events which occur are affected by their own actions. It therefore probes people's perception of the source of events, their causation and, in particular, whether they themselves played any part in the proceedings.

Such a concept is clearly relevant to the earlier consideration of influences upon, and responsibility for, health. If a person accepts that what he does is detrimental to his well being he may resist any

desire to carry out the action. Similarly if a parent recognises that his example may cause his child to do likewise then he might well avoid certain forms of behaviour.

The notion of LOCUS OF CONTROL arose from social learning theory and was expressed originally in terms of internal or external control of reinforcement. In this sense reinforcement is defined as "anything that has an effect upon the occurrence, direction or kind of behaviour" (Phares, 1976). Much of the early work in this field is attributed to Rotter (1954) though Phares also was actively involved in developing measures, as discussed later in chapter three. Rotter (1966) defines internal-external locus of control in the following way:

> "an event regarded by some persons as a reward or reinforcement may be differently perceived and reacted to by others. One of the determinants of this reaction is the degree to which the individual perceives that the reward follows from, or is contingent upon, his own behaviour or attributes versus the degree to which he feels the reward is controlled by forces outside of himself and may occur independently of his own actions. When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then in our culture it is typically perceived as the result of luck, chance, fate, as under the control of powerful others or as unpredictable because of the great complexity of the forces surrounding him. When the event is interpreted in this way by an individual we have labelled this a belief in EXTERNAL control. If the person perceives that the event is contingent upon his own behaviour or his own relatively permanent characteristics, we have termed this a belief in INTERNAL control."

Such a concept of human thought or behaviour is clearly applicable to a great many life situations since the element of control, be it internal or external, is normally a factor to be considered. In the event, research in LOCUS OF CONTROL has developed rapidly over many

fields following the early research projects. Rotter's scale was based upon a unidimensional view of the concept but later researchers accepted Levenson's contention that three distinct dimensions could be identified and scales developed accordingly. Whereas Rotter saw two distinct categories (INTERNAL and EXTERNAL) Levenson (1973) sub-divided the latter into a dependency upon POWERFUL OTHERS and a dependency upon CHANCE or LUCK. These theories and developments are discussed fully in chapter three.

The term "Health locus of control" is based completely upon the principles described in this section and only differs insofar as it applies specifically to the field of health. In this respect health is taken in the broad sense explained fully in section 2.1 earlier, incorporating physical, mental and social dimensions. Since most human activity could be allocated to one or other of these categories the terms may be seen as synonymous. However most research in this field based upon "health" is confined to a precise behaviour such as alcoholism, birth control or smoking.

2.6.2. Characteristics Associated with Locus of Control

The central issue in this area of study is clearly the question of CONTROL. It is necessary however to distinguish between a desire for control and a perception of control being present or possible. People accepting that control is possible have been shown (Phares 1976) to behave quite differently to those not able to accept such a view. Both groups may actually share a similar level of motivation for control. Behaviour however will be determined by a combination of both factors.

Also important in these deliberations is the question of valuation, the extent to which the particular issue is high on any list of personal priorities. Many researchers have failed to take note of this factor with the result that their work has suffered accordingly, in the sense that their explanations have been less plausible and acceptable to critics (Wallston, 1978; Phares, 1976). Equally, if not more important, is the belief that prediction is aided by a knowledge of the value attached to a particular outcome by an individual. In accepting the link between motivation and behaviour it follows that some measure of valuation would enhance both the exploratory and predictive powers of any procedure designed for such purposes.

An important characteristic often associated with locus of control is that of "attribution of responsibility". This refers not only to the identification of the source of an event but also to the question of apportioning blame for its existence or effect. Research such as that of Thibaut (1955) and De Charms (1965) suggests that internally orientated people see themselves as responsible for events and project similar expectations onto other people. By the same token externals tend to be less prepared to accept responsibility for events and tend to feel that other people should hold a similar view. Such a notion has important implications for altruism, helping behaviour and many interpersonal reactions. It suggests, for instance, that internals may be less willing to help others than externals. The evidence from some studies (e.g. Phares 1975) tends to support this claim but such research was carried out with case studies. Other research using face-to-face settings (Midlarsky, 1971) showed internals to be more helpful than externals. Perhaps the nature of

the situation is all important along with the relationship established between the respective parties.

Attribution of responsibility has been studied in terms of its use as a reaction to personal success or failure. Research by Phares (1971) and Davis (1972) confirmed that internals did indeed show a stronger tendency to blame themselves for failures than did externals. Externals, following failure, would be more inclined than internals to rationalise the outcome by attributing it to forces beyond their control. However the two groups did not differ in assuming personal credit for success.

As some of these studies imply there may be so-called defensive externals who act as internals, in the sense of being highly action-orientated, but who respond as externals to cover themselves in the event of failure. A concurrent strategy of devaluing the particular goal in question may also be deployed by such personnel in the event of failure whereas internals are more likely to decide to try again. Both reactions may be interpreted as defence mechanisms to help cope with anxiety aroused as a result of failure to achieve. In some respects it may be seen as advantageous for externals to rationalise in such ways whereas internals may find failure hard to accept due to their acknowledgement of personal responsibility for it.

In a similar vein Phares found that externals were better able to deny threat and accept help with personal matters than internals who tended to deny such needs to themselves. Thus whilst it appeared on the surface that externals were less able to cope with demands upon them, much harm could result from internals being unable to express anxiety

by rationalisation, accept personal limitations or seek help from others.

This aspect of locus of control, attributing cause and effect, is therefore highly relevant to the issue of "responsibility for health" discussed in the previous section (2.5). It would seem quite likely that someone who attributes events in general to forces beyond personal control will feel similarly about matters of health. Equally a belief in the power of personal action to influence life goals will, in all probability, be applied to health-related attitudes and behaviour.

Locus of control has been shown to be associated closely with a desire, by internals, to control and master their environment. Early work by Seeman (1962) demonstrated a clear relationship between internality and information-seeking behaviour designed to enable those involved to cope with their world in a more effective way than hitherto. Seeman's studies identified the acquisition of useful knowledge by internals whilst Phares (1968) showed that internals performed better in recall of information and its utilisation. This and later work by other researchers supported the conclusion that internals are clearly superior to externals in the area of cognitive processing.

Having discussed the relatively greater control that internals exert over the environment it would seem relevant also to consider control over self and locus of control as a personality variable. Straits (1963) noted that non smokers were significantly more internal than smokers. Lundy (1972) showed that in single female college students

(who were quite similar in degree of sexual experience) there was a significant relationship between internality and birth control practices. These and other studies strongly suggest that an internal orientation provides a greater potential for exercising the kind of personal control that will lead to more positive or valued outcomes. Such differential behaviour is further evidence of the better planning ability of internals which leads to greater benefits in the long run.

The research findings on risk taking and locus of control are somewhat contradictory. Liverant (1960) found that internally-oriented subjects preferred safe bets to high-risk "long shots" than did externals. The results support the idea that internals will be more cautious whilst externals will engage in riskier behaviour. This interpretation is reinforced by a study (Julian, 1968) in which internals were found to prefer choices with a high probability of success while externals were drawn towards choices with a low probability of success.

On the other hand some researchers (Strickland, 1978; Baron, 1968) have found that internals take greater risks than externals by being more able to assess and circumvent the odds or probabilities of events. No doubt factors such as previous experience, motivation, valuation of outcome and the particular circumstances are all variables which mediate the cognitive processes of "players" and result in the various responses found in such research.

In many areas of life (e.g. schooling, housing, career development) certain hardships or costs have to be incurred in the present for greater promise (or reward) in the future. The notion of resisting

such immediate rewards for future gain, "deferred gratification", has been studied with regard to locus of control since it is clearly associated with the characteristic of personal control.

The research that has been undertaken has been somewhat artificial however since it would require an extensive longitudinal study with meaningful long term benefits to be valid. Bialer (1961) reported a significant correlation between internality and the choice of deferred rewards. Strickland (1973) also showed clearly that internal control beliefs were substantially related to choices involving delayed, more valuable rewards. These and other studies demonstrate a definite basis for the relationship between an internal locus of control and a readiness to delay gratification in the service of large rewards later. The magnitude of the relationship however will depend upon considerations such as the sample population, the nature of the experiment and the methods used.

Another important characteristic associated with locus of control is that of reaction and resistance to social influences or pressures. It has already been shown that internals are more likely to possess higher levels of personal control than those with an external orientation. Given the association between success, particularly academic, and internality, it does seem that levels of self-confidence would similarly be greater in such individuals. If this is so, there are grounds for predicting that internals would be less likely than externals to conform to the judgements and wishes of others but more likely to depend upon their own inner resources in making decisions. Crowne (1963) devised a conformity experiment and found a greater resistance to group pressure on the part of internals and also a

greater confidence level. Tolor (1971) found that externals were more prepared to accept suggestions that a stationary light was moving than were internals, implying a greater susceptibility to persuasion or social influence.

Research by Ritchie (1969) and Ryckman (1972) demonstrated that externals are more prepared than internals to change attitudes as a result of communication from credible sources. Whereas internals are influenced by the issue itself externals yield more to the perceived prestige of the communicator regardless of his (her) relevance to the situation.

One theory widely promoted to explain this sociological phenomenon of locus of control involves the individual's definition of the situation. Related closely to Schutz's (1972) theory it suggests that externals tend to perform in the manner they consider to be expected of them in order to "please" the experimenter and thereby achieve the particular goal in question. Lefcourt (1967) found that externals tend to follow experimental instructions whilst internals do not. It would therefore appear that externals are readily persuadible, conforming to what they believe is expected of them and accepting information or other sources of influence. When internals conform or change their attitude it appears to be on the basis of a considered analysis of the merits of the message.

Externals may have such a strong need for approval (Maslow, 1954) and reinforcement from social agents who have prestige, power or other attractive qualities, that they are easily led or induced to behave in a fashion that they believe will attain those valued objectives. It

may also be that a general lack of belief in their own control capability leads to conformity. Finally externals may feel that success or the "right" behaviour is possible only by paying attention, and responding appropriately, to the cues of others. A lack of confidence therefore breeds dependence on external sources. It may also make some externals extremely vulnerable to social influences of various kinds.

The concept of control is clearly associated with the self-realisation or determination movement since by definition the latter involves accepting and taking responsibility for one's life plan and events. Similarly in the field of social change such as civil rights, women's health or consumerism locus of control is obviously implicated. MacDonald (1971) emphasised the crucial role of expectation for success, differentiating between desire accompanied by low expectations (pessimists) and desire accompanied by higher expectations (optimists). Much of his work involved the promotion of internality and extending people's vision of the change which was considered to be possible. Raising such aspirations has been shown to be the foundation for immense social change in many countries and is clearly a continuing process (e.g. the Philippines)in the world today.

2.7 IMPLICATIONS FOR EDUCATION

If locus of control is accepted as a significant factor in determining the course of life events it seems desirable to consider the potential for developing the variable in young people. Most of the research undertaken to date has been of a descriptive nature concentrating upon "how things are". Very much less rigorous research has been

undertaken on an experimental basis to show change in locus of control. One of the problems of this approach with adults is the time factor required to observe change in deep-rooted beliefs since the antecedents are often to be found in primary socialisation. The world of schooling therefore may offer the best scope for empirical research and development based upon sound and ethical educational theory.

To what extent can the world of schooling affect the locus of control beliefs of its pupils? Such a question is closely associated with a deeper question regarding the influence of education experience generally and its conflict with many of the values of the culture from which children come. Schools have been shown (e.g. Rutter, 1979) to be significant sources of influence on pupils' attitudes and behaviour for good or ill. Given that on average each child spends fifteen thousand hours in the education system the opportunity is presented for personal education, both of a formal and informal nature, to be undertaken on a planned basis with clear objectives in mind. Much will, of course, depend upon teachers, the strategy adopted, the learning milieu and pupils themselves in determining the outcome of such programmes.

One of the most detailed attempts at measuring the effects of school experience was carried out by De Charms (1972). A week-long residential course for teachers was held to plan special exercises for pupils that aimed at promoting self-concept, achievement motivation, realistic goal setting and locus of control. Subsequent evaluation found evidence of increased locus of control in children's written work and in academic achievement compared with control groups. One other interesting effect was the improvement in school attendance by

the experimental group, perhaps being a response to the additional attention given to them as a result of the programme.

Nowicki and Barnes (1973) in a study with inner city adolescents, showed that a highly structured summer camp experience that emphasised the relationship between behaviour and reinforcement tended to enhance internal control expectations. Tyre and Maisto (1974) designed a programme to change pre-adolescents' locus of control beliefs. The effect was not shown immediately but six weeks later when increased internal beliefs were noted for the experimental children but not in the control group.

Much of the work involving programmes designed to promote an internal locus of control is still somewhat preliminary in nature. It is clear that belief in an internal locus of control can provide individuals with a greater sense of control and thus a greater potential for power. As techniques are refined and developed it will help large numbers of people to acquire skills and beliefs that will enable them to take greater control of their lives in many respects and in consequence be instrumental, if they so wish, in influencing much of their destiny.

A number of clues to classroom strategies that will develop internal locus of control have come from other associated studies. Davis (1969) showed that both inconsistent reinforcement and consistent but heavy reinforcement can lead to an external orientation. The former can be linked to a dependency upon CHANCE due to the unpredictable nature of the reinforcement. The latter can result in dependency upon POWERFUL OTHERS through the domination factor or a desire to please and avoid negative (unpleasant) reinforcement.

Many studies have demonstrated a clear relationship between social class, race and locus of control. Battle (1963) showed that middle class children were more internal than lower class children irrespective of race. Gruen (1969) came to the same conclusion following his examination of the effects of social class on children. Black groups have been found to be consistently more external than white groups in research studies (Lessing, 1969; Shaw, 1971; Strickland, 1972; Zytkoskee, 1971).

Two possible explanations appear plausible for these findings. Firstly the direct teaching of such beliefs by family, friends and associates within the local culture are internalised by recipients as self-evident truths. Secondly the reality of personal experience may in fact be so different that such discrepancy in stated locus of control does actually reflect the different worlds of the various groups investigated.

The educational implications are clearly visible. In the first instance teachers should be seeking to encourage children to consider alternate locus of control beliefs which may be suitable for them. Experience at school of internal locus of control (e.g. being allowed to make decisions, delegation of responsibility, awareness of cause and effect) should be provided for those groups more externally orientated. Examples of how children could exert some control or influence on their community should be discussed as part of personal education or Lifeskills programmes. This would need to be accompanied by planned exercises to develop characteristics such as confidence, self-esteem and assertiveness. Whilst retaining the element of reality, in knowing for instance what cannot be easily changed,

expectations can most certainly be raised as a result of such programmes enabling children to develop new beliefs in their ability to exert control over themselves and their world.

It is important to recognise, during these deliberations, that locus of control is not a constant personality characteristic in people. The perceived and desired element of control over life spheres will vary according to the value attached to the issue, past experience and expectations of outcome. A school programme is able to clarify the profile of individual pupils, regarding locus of control, in whatever domains are selected for study. Subsequent analysis (see section 6.5.22) will enable low levels of control to be identified so that IF THE PUPIL SO WISHES he can be helped to establish a greater degree of control in that particular area. Teachers should respect the views of pupils and not exert undue pressure on them to comply with their own value system where locus of control is concerned.

Research by Phares (1976) and others suggests that as children become older and move out of the period of childhood dependency and total reliance on the family, their locus of control becomes more internal. The variable, in this context, may be seen as a concomitant of personal development or maturity. Part of "growing up" is perhaps a willingness to accept greater responsibility for one's actions and, on occasions, lack of action which could have been taken to influence events. From the point of view of schooling it is important that well structured programmes of personal education are provided for all pupils to facilitate this process of development towards adulthood. Though other factors are clearly present, schools nevertheless can, and do, make a significant contribution to the needs of young people in this respect.

There are many implications for education in this whole question of health promotion and locus of control. In assisting the personal development of young people teachers can help them to come to terms with recognising their own health needs and encourage the acquisition of those skills conducive to personal and collective action in pursuit of such goals. The concept of health locus of control is of significance in this movement and worthy of special attention. The research programme which follows is an attempt to give the concept the very attention which it so fully deserves.

CHAPTER THREE

THE RESEARCH PROGRAMME

3.1 REVIEW OF EXISTING LOCUS OF CONTROL MEASURES

The first locus of control scale evolved out of two dissertations presented at Ohio State University. Phares (1955) developed a short scale which James (1957) expanded and refined into a 60-item Likert scale. This measure, referred to as the James-Phares Locus of Control Scale, provided the source from which the better known Rotter Scale was subsequently developed. The James-Phares Scale was not designed to assess general conceptions of locus of control. Rather it sought to produce a measure which could be applied to many issues or situations. However, its design limitations became clear upon factor analysis and demonstrated the need for further refinement and development.

The early scale construction initiatives were followed by more systematic and extensive work in this field, notably by Rotter and his collaborators, Seeman and Liverant (1962). Their Internal-External (I-E) Scale was based upon the notion that prediction would be enhanced when locus of control was measured in specific life areas than when using a single measure, such as Phares earlier, to relate generally to many diverse situations.

The I-E variable was defined as in the following extract:

> "When a refinement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him ..... we have labelled this a belief in EXTERNAL CONTROL. If the person perceives that the event is contingent upon his own behaviour or his own relatively permanent

> characteristics, we have termed this a belief in INTERNAL CONTROL."
>
> Rotter 1966

The earliest version of the scale contained 100 forced-choice items covering areas such as academic recognition, love and affection, dominance and general life philosophy. Factor analysis and modifications led to a final version (1966) of 23 items that subsequently became known as the Rotter Internal-External Control Scale (often referred to as the I-E Scale - Appendix I).

Although Rotter recognised the need for specificity when measuring locus of control he was unable to develop sub-scales that would relate precisely to situations. Since the scale covered a range of life areas, it was described by Rotter as being an additive scale. This produced a scale that predicted moderately well across a number of situations. If however the object was to predict behaviour in one situation then it would be advantageous, as many later did, to develop a scale with all items directed to that situation rather than an additive-type scale.

Not long after Rotter's I-E Scale was first published a second locus of control scale was introduced, the Intellectual Achievement Responsibility (IAR) Questionnaire (Crandall, Katkovsky and Crandall, 1965). This scale was targetted on children's achievement behaviour exclusively. In addition to its specificity the IAR Scale contained two major subsets of items, one concerning success experiences and the other failure experiences. Another feature of the IAR Scale that differed from Rotter's I-E Scale was the naming of external causes of outcomes. In general the IAR Scale implied that external causes were

"other persons". This construction was thought to be more appropriate than chance, social systems or the other causes that composed the external alternatives on Rotter's I-E Scale.

A few years later Levenson (1973) presented her own three subscale version of Rotter's I-E Scale. Her scales, Internal, Chance and Powerful Others brought focus to the varied agents of control that could affect outcomes. Levenson's measure broke new ground insofar as it allowed for the possibility of examining profiles. It is entirely conceivable, for example, that someone could believe in the potency of luck at the same time as expressing a belief in the effect of effort, a point too easily obscured by the format of Rotter's I-E Scale. Moreover the behaviour of such an individual could be rather different from that of a person who shares the belief about luck but does not believe that effort can alter his or her particular outcomes.

A number of other research studies have investigated children's locus of control particularly with regard to academic achievement and mastery - coping efforts. The 1966 Coleman Report in the United States brought attention to bear upon the association between pupils' locus of control beliefs and achievement and subsequently led to an upsurge in research programmes in the field.

> "A pupil attitude factor which appears to have a stronger relationship to achievement than do all the 'school' factors together is the extent to which an individual feels that he has some control over his own destiny ..... The responses ..... show that minority pupils, except for Orientals, have far less conviction than whites that they can affect their own environment and futures."
>
> Coleman, 1966

Many of the new wave of researchers into children's locus of control used either the IAR or a scale devised by Bialer in 1961 for use both

with mentally retarded and normal children. The latter scale investigated children's conceptualisation of success and failure, their perceived control over events and their willingness to delay immediate gratification for later benefits. In general the data collected supported the hypothesis that internal beliefs are significantly related to academic achievement.

A number of studies (Phares, 1971; Weiner, 1971 and Karabenick, 1972) focused upon how children attributed responsibility for success and failure. They found that internals experienced greater satisfaction from success than externals who ascribed the outcome to outside forces. Failure however was accepted more easily by externals, who could rationalise causation, than by internals who accepted personal responsibility for the failure, particularly where simple tasks were involved.

The Nowicki-Strickland Personal Reaction Survey has been extensively used to measure children's locus of control. In addition to probing the three sub-scales as in Levenson's measure the scale also identifies levels of deferred gratification. The general finding of this latter characteristic is that internals are more likely to accept the choices (or value) of it as opposed to externals who opt for immediate (even if lesser) rewards. Other researchers, (e.g., Mischel, 1974) have confirmed the association between locus of control and delay behaviour.

Finally in this section it is appropriate to turn to the field of health where several specific measures of locus of control have been reported in the literature. Probably the best known measure in the

health field is that developed by Wallston, Kaplan and Maides in 1976 (the Health Locus of Control Scales) followed in 1978 by the Multidimensional Health Locus of Control Scales. The former scales consisted of 11 items and were developed as part of a patient education programme. Whilst relating primarily to diabetic patients the scales were designed also to provide a general locus of control measure by incorporating many health-related settings and behaviour.

Following Levenson's development of three distinct sub-scales in her locus of control measure Wallston reconsidered his original decision to treat health locus of control as a unidimensional concept (most of the 11 items were worded in an external direction). Wallston was sufficiently impressed with Levenson's work to use it as a model for a new health locus of control development.

The Multidimensional Health Locus of Control (Appendix II) required three separate sub-scales to be developed representing the Internal, Powerful Others and Chance scales as identified by Levenson. Wallston in fact went further by producing equivalent forms of the scales for administering in test-retest reliability exercises (each sub-scale consisting of six items). An additional modification was that each item was personally worded to represent beliefs about self (personal control as opposed to general control ideology). A six point Likert-type format was employed ranging from "strongly agree" to "strongly disagree".

Both of these health locus of control measures have been applied by other researchers in the health field. Nicholson (1980) investigated childbirth experiences and subsequent effect upon locus of control

finding a significant swing towards chance. Bloom (1979) compared the effect of counselling for mastectomy patients in an experimental trial using a control group. The intervention group was subsequently found to be significantly less external than the control group two months after surgery. Sproles (1977) found that not only did internals know more about their condition (renal dialysis), they also desired more information and were more willing to attend classes. Kaplan (1976) found that internals on a weight control course expressed greater satisfaction with a self-managed programme whereas externals were more satisfied with a therapist-directed programme.

Parcel and Meyer (1978) developed a scale specifically aimed at assessing children's health locus of control (Appendix III). The 20 item scale (a shortened version of 9 items has also been developed) designed for children aged between 7 and 12, required a yes (agree) or no (disagree) response to the various statements presented. Based upon concepts of "self responsibility for health" and "health motivation" the objective was to use the scale as one of a number of variables to predict health behaviour. Item wording took account again of Levenson's sub-scale classification and this was subsequently revealed in the item analysis with three distinct features being clearly identified. The authors considered that the instrument would assist the application of learning theory to children's health behaviour as a result of determining the precise relationship between health locus of control and behaviour and evaluating the effects of planned learning experiences upon locus of control.

3.2 RATIONALE FOR THE DEVELOPMENT OF NEW HEALTH LOCUS OF CONTROL SCALES

The Health Locus of Control scales described in the previous section were all founded upon a medical model of health. The items related predominantly to avoidance of disease or the prevention of accidents that could affect physical well being. A logical assumption would be that the authors themselves perceived health in these terms and thus designed questions which probed their own interpretation of the concept.

As discussed in Chapter 2, however, health may be defined more broadly than in such medical terms. Even in the physical domain a positive element may be identified in the area of physical fitness and vitality. The assumption that good health exists, without question, in the absence of illness symptoms is becoming increasingly discredited in the health field. Many people are in low health without any visible signs of ill health being present. In many cases they are not in a sound state of physical well being.

Health however should be seen as a quality extending beyond physiological functioning to incorporate such diverse factors as cognitive processes; the fulfilment of emotional needs and establishment of enjoyable personal relationships. By the very act of thinking, feeling and reflecting, a person receives both pleasant and unpleasant experiences though the causation of such responses varies from one person to another. Mental health therefore must be acknowledged as a vital dimension of health in which positive and negative stimuli may cause feelings such as enjoyment, satisfaction,

fear or anxiety. The social side of health involves interpersonal relationships which may prove to be satisfying or otherwise according to circumstances. Again it should be recognised as an essential component of the health concept.

In accepting the view that health encompasses life spheres beyond the physical, the notion of the holistic nature of man emerges. Inherent in this philosophy is the idea of man being a combination of many selves (physical, mental, social, spiritual) that co-exist to form a whole entity. Each contributes to the whole being and is indispensable, yet the total, as in gestalt theory, remains greater than the sum of the individual parts. Concepts of equilibrium and integration are central to the holistic view of health, their absence leading to specific problems emerging as ill health.

Chinese medical philosophy recognises the holistic nature of man and accordingly seeks to cope with ill health by treating the whole person rather than merely alleviating the presenting symptoms. Illness is seen as symbolic of harm to the whole being. This often involves a consideration of the wider experience and environment of the individual as opposed to the western world's concentration upon infectious organisms or personal behaviour (sometimes referred to as 'victim-blaming').

The various dimensions of health described earlier (physical, mental and social) are inter-related components of a whole being. Whilst it is both feasible and possible to focus upon each individual dimension it has relatively less meaning and impact than if they are seen as components of the whole person, each affecting the other and the

whole. Physical illness, for instance, may be expressed as irritability or depression, loneliness may lead to misuse of alcohol whilst anxiety may affect personal relationships as well as causing ulcers.

Health locus of control scales based upon a narrow view of health are inappropriate not only in terms of the conflicting theoretical frameworks but also with regard to the ability of such scales to measure the full range of necessary constructs. Though scales based upon the restricted definition, or upon a specific situation, may be attractive in terms of validation, theory should not be ignored in the construction of scales. A strong reason exists therefore for developing new health locus of control scales based upon the design features of earlier researchers (Internal, Powerful Others and Chance sub-scales) but which take their content from a broader, and perhaps more modern,* model of health.

Another important factor to be taken into account is that Parcel and Meyer's scales were designed for use with primary school children whilst Wallston's scales were aimed at older adolescents and adults. Younger adolescence is a time of considerable change - physically and mentally - for most people. Pressures often appear from all quarters - parents, peers, teachers, fashion, the musical world, advertising - to form a fermenting cauldron of ideas, desires, hopes and fears.

* "Modern" refers to post 1948 in this instance. The environment was certainly acknowledged by 19th century reformers such as Chadwick as being crucial to health. The famous phrase from Greek mythology "MENS SANA IN CORPORE SANO" (a sound mind in a sound body) needs no further comment.

This time of identity formation appears to offer great scope for a measure designed not only to investigate beliefs held but also raise awareness of alternative viewpoints available for those willing to reach out for them. A health locus of control scale for young adolescents appears therefore to be both essential and desirable.

The vast majority of developments in this field have been carried out in the United States following the early work of Phares and Rotter. Close inspection reveals quite profound cultural differences in the phrasing and meaning of items. For instance, the association of medical treatment with ability to pay would be implicit in the American child's view of health services and dependency upon them. Equally the perception of the role of chance might well be affected by such an economic factor. Since most questions are based around medical and nursing personnel in the existing scales there appears to be good cause for attempting to develop scales more relevant to this country's situation regarding medicine in addition to the issue of item range discussed earlier.

Health locus of control measures should be viewed as an important component of the wider process of profiling and assessment in health education. This does not imply a grading process along an approved continuum but rather a diagnostic mechanism for identifying where pupils are at present. Though Users may have their own value system which they impose upon the measures being recorded it is not the intention of the scales that Users are helped to produce an ideal locus of control type.

However the measure has taken account of current thinking in the area of profiling by recording a variety of beliefs to demonstrate

different degrees of intensity and by keeping records for further administration in order to chart any changes over time. The avoidance of value judgement in the measure and subsequent User's Guide is also an attempt to be consistent with profiling ideology.

Health education in schools is increasingly being seen as an integral part of the personal growth of children. Both in formal and informal curriculum terms it contributes to the personal development of caring, confident and responsible young people. Similarly it identifies closely with the Lifeskills movement which actively promotes the acquisition of values such as self-esteem, assertiveness and the ability to establish satisfying personal relationships. The health locus of control scales have been constructed in the light, and upon the strength of such educational thought. Accordingly it seems reasonable to expect them to be used in such a way that no conflict arises with programmes of personal and social education being pursued by teachers and students.

Given this wider context it is intended that the scales will contribute to studies of health behaviour in an educational setting. Though Wallston found a disappointing level of association between locus of control and specific preventive health behaviour the new scales may still contribute to greater understanding of self and others. Being aware of why people act as they do is helpful in understanding one's world even in the presence of differing value systems. The scales, furthermore, might aid prediction of certain types of behaviour by identifying individuals who may be particularly vulnerable to the influence of peers and therefore more likely to adopt group norms such as smoking, drinking or misuse of drugs.

Finally it may be that a health locus of control scale will be developed that will be robust enough to be used in a number of situations and also, subsequently, as a basis for developing other relevant sub-scales. Since the question of general, as opposed to situation-specific, items has been strongly debated the items in the new scale relate to both entities, focusing upon the constructs in a general and situational context.

3.3 THE PURPOSE AND SCOPE OF THE RESEARCH PROGRAMME

The previous section identified a number of shortcomings possessed by existing health locus of control scales and followed by making a case for a new set of scales related to British culture and based upon a multidimensional perception of health. The scales were also to be designed primarily for use with young adolescents at a time of personal growth towards maturity and relative independence.

The development of such new health locus of control scales forms the major thrust of the research programme described in the following chapters. Validation and reliability tests necessitate an extensive research and development programme to be undertaken before new scales can be offered with confidence and credibility to the education profession. All other aspects of the programme are secondary or complementary to the construction of the scales though dissemination through a User's Guide and other mechanisms (see Chapter 8) is worthy of special reference at this point.

The purpose and scope of the research programme may be best described by identifying the main aspects and stages, which are to:

1. design three item pools to form each sub-scale and, in combination, the full scales;
2. collect data about young adolescents' health locus of control beliefs;
3. develop other associated sub-scales such as risk taking;
4. investigate pupils' conceptualisation of health;
5. examine the correlation between health locus of control and associated sub-scales (4);
6. examine the association between health locus of control and conceptualisation of health;
7. identify the extent to which the health constructs are valued;
8. identify the extent to which pupils desire control over the health constructs;
9. investigate the existence of dispositions in health locus of control;
10. examine the relative importance of ideological and situational factors;
11. compare the findings with other studies;
12. develop a system for health locus of control profiling;
13. consider the potential for health locus of control typology;
14. develop a User's Guide;
15. develop a computer programme; and
16. produce a protocol for administering the scales.

3.3.1 Development of the Scales

The aim is to produce three sub scales representing Internal, Powerful Others and Chance in line with Levenson's classification (see 3.1) but based upon the wider perception of health discussed in the preceding section. There must be consistency of wording and meaning both between items in the same sub scale and between those items from different sub scales but representing the same dimension (or construct) of health.

3.3.2 Adolescents' Health Locus of Control Beliefs

This research programme will provide a considerable source of information concerning how young adolescents feel about the amount of control they may, or may not, possess with regard to various aspects of their health. Though those in close contact with pupils may believe that they know them well it may not necessarily be so. Confirmation of existing beliefs will be reassuring in itself whilst new findings will enable appropriate learning experiences to be planned for pupils.

3.3.3 Development of Associated Sub Scales

Separately from the three sub scales making up the health locus of control scales will be the construction of four other sub scales representing "GOOD HEALTH", "SUSCEPTIBILITY TO ILL HEALTH", "RISK TAKING" and "NEWNESS". These have been associated with locus of control in other research projects and will provide further interesting data concerning the way in which young people perceive their world. These scales are all linked to health given the wider model upon which the main scales have been based.

3.3.4 Conceptualisation of Health

The objective here is to examine the way in which pupils view health as a concept or personal asset. This could range from a sickness model to a community development model where health is seen as a product of environmental circumstances. As with many aspects of personal ideology the antecedents may lie in socialisation and cultural influences.

3.3.5 The Main Scales and Associated Four Sub Scales

By examining the relationship between the main scales and associated sub scales it may be possible to identify other characteristics linked with health locus of control. For instance it might be discovered that a tendency towards Chance is positively associated with a valuation of risk taking or that high scores on the Internal scale correlate with an acceptance of the link between present behaviour and susceptibility to ill health. The many combinations are merely open to conjecture at this stage, hence the need for further investigation.

3.3.6 Health Locus of Control and Conceptualisation of Health

As in the preceding case the aim is to compare and contrast the main scales with the sub category relating to pupils' conceptualisation of health. This offers scope for new data on the relationship as well as an opportunity to measure consistency in response. A tendency towards dependency upon Powerful Others for instance may be associated with health being conceived in terms of interpersonal relationships (the social side of health).

3.3.7 Valuation of Health Constructs

Here the intention is to measure the extent to which pupils value the various constructs of health incorporated into the health locus of control scales. Other studies have shown the significance of this factor in determining responses to questionnaires such as that planned for this programme.

3.3.8 Desire for Control of the Health Constructs

This represents pupil motivation for a measure of personal control over the health constructs involved in the new scales. Whilst it might be predicted that the more highly valued constructs will enhance desire for control, it may be that desire for control is a strong or weak disposition in individuals irrespective of valuation.

3.3.9 The Existence of Dispositions

This component of the programme is primarily concerned with pursuing the question of whether health locus of control is a general disposition, and therefore predictable from other measures, or if the specific circumstances in each enquiry cause considerable variation in belief to be expressed.

3.3.10 Ideological and Situational Factors

Other researchers have chosen to develop EITHER questions which reflect the individual's general philosophy on the issue OR questions which represent a specific view on an identified situation. The aim in these new scales is to integrate both aspects into the item pools and compare their relative impact.

3.3.11 Comparison With Other Studies

Though not the major thrust of this programme it will nonetheless be interesting to compare many of the findings with earlier research for confirmation of trends, identification of alternative outcomes or guidance with design modifications to the scales. New lines of enquiry may well arise as a result of such comparative study.

3.3.12 Health Locus of Control Profiling

With profiling becoming increasingly accepted as an assessment procedure it is appropriate to develop a mechanism for pupil profiling based upon health locus of control beliefs. This, of course, will be greatly influenced by the issues of variation and disposition discussed earlier (3.3.9 and 3.3.10). If profiling in this area proves possible then it will serve to enhance other profiling developments of recent times.

3.3.13 Health Locus of Control Typology

Following the establishment of a profiling system it may be possible to identify a number of major health locus of control types based upon various combinations of the three sub scales in differing degrees of intensity. It is important to stress that no value judgement is being passed on the types which are to be developed as a classification index to aid further discussion on an individual or group basis.

3.3.14 A User's Guide

In order to facilitate proper application of the scales a User's Guide will be developed. This will serve to give greater understanding of the scales' purpose and suggest various uses for them in an educational context. Equally it will attempt to discourage any misuse of the measure, intentionally or otherwise.

3.3.15 A Computer Programme

This will be developed for the data analysis procedure and application of statistical tests. However it may be possible to retain a computer programme that could be similarly used by others wishing to administer the scales in their school and subject the results to rigorous data analysis as in this research exercise.

3.3.16 Similarly, to assist future Users, a protocol for effective administration will be developed addressing issues such as classroom atmosphere, pupil reassurance, confidentiality and valid responses. This is intended to minimise error scoring and thereby ensure that as far as possible teachers receive an accurate record of their pupils' true beliefs in these areas of their lives.

3.4 THE RESEARCH DESIGN

3.4.1 Introduction

The preceding sections described the reasoning behind the research programme and its parameters, including limitations. In this section it is necessary to examine how the planning cycle for the programme was implemented in order to reach the objectives specified earlier.

This process involved a number of stages - scale content, validation, research exercises and methodology. Each was a significant component of the total operation and had to be completed successfully if the new scales were to be properly developed and made available to others.

3.4.2 Early Work

This centred around informal discussions with small groups of third year pupils in a local comprehensive school concerning personal control over aspects of health, important elements of health and their perception of health. A few phrases were presented verbally to pupils and their comments noted regarding comprehension and alternative phrases. These discussions helped to consolidate thoughts on the possible content areas to investigate in health locus of control and conceptualisation of health though the research at this point remained very much in an embryonic stage.

3.4.3 Research Strategy

It was clear that the scales would have to be developed and trialled in a number of phases before they could be made available as a final version to other users. This development programme was designed in the following stages.

3.4.3.1 The Prototype Exercise The general purpose of designing and administering this enquiry was to test its relevance to the pupils for whom it was intended. Whilst it incorporated both a validation and reliability component it was in reality an attempt to check that pupils could give considered answers to a series of questions covering a range

of personal characteristics and issues. The intention was to learn from the research and it was accepted from the outset that very few claims could be made from any results due to the exploratory nature of the exercise.

Since this phase was very much an introductory and learning experience in terms of the scales' function an opportunity sample of pupils (72 in all, 32 male and 40 female) was obtained by approaching a local comprehensive school. Three distinct academic groups of third year pupils completed a questionnaire comprising the various sub scales and other categories of items described in the following section (3.4.4). Full details of this phase, including major findings and an analysis of the exercise, are given in chapter 4.

3.4.3.2 The Pilot Exercise This exercise sought to build upon the foundation of the previous phase which had been an initial foray into this field of research. The purpose here was to apply the modified scales to a different population of third year secondary pupils testing for validity, reliability and the development of an administrative protocol.

Whereas the Prototype Exercise had been carried out in one school it was considered somewhat more representative if the pilot phase was undertaken in two schools. Though still selective in terms of all schooling this was an improvement upon the previous exercise. It would also enable a comparison to be made of groups both within and between

schools which might reveal differences related to pupils as individuals or to varying educational experiences. The sample population therefore comprised two groups of mixed ability pupils in one school and two distinct (higher and lower) academic groups of pupils in another school, a total of 91 pupils in all. Full details of this phase, including major findings and an analysis of the exercise are given in Chapter 5.

3.4.3.3 The Reliability Exercise This was a special phase deliberately designed to attempt to improve the reliability (internal consistency) of the three health locus of control sub scales prior to the main investigation being undertaken. Accordingly the wording of each item pool was carefully re-assessed using a group of third year pupils (see 3.4.5). Following this exercise the scales were administered to an entire third year group of pupils in a rural comprehensive school in order to provide a complete cross section of ability in academic and personal terms. As the research was undertaken simultaneously with the four mixed ability tutor groups of the third year (88 pupils in all) the exercise enabled the data to be gathered with minimum disruption to normal activities. Finally the phase tested the independent use of the questionnaire by teachers guided by prepared "User Notes". Full details of the findings, including an analysis of the exercise, are given in Chapter 5.

3.4.3.4 The Main Research Exercise At this stage of the research programme it was considered appropriate to administer the

scales to a large sample population in order to obtain a clearer picture of their health locus of control beliefs and health concepts than that obtained from the earlier stages of this research programme. Secondly the investigation would provide a further opportunity of measuring both the validity and reliability of the scales, thereby assessing the progress achieved as a result of the changes made to the scales.

In planning this phase two issues needed to be resolved. The first involved the selection of items, to form the three item pools, from the range of items used in earlier phases (see 3.4.5) and the second concerned the target group. A larger sample population drawn from a greater number of schools would produce a more representative selection of third year secondary school pupils than on previous occasions. Provided that the scales retained their validity and reliability the findings would present a more accurate view of beliefs held than earlier studies.

Six schools were therefore approached and agreed to participate in this phase of the research programme. Since tutorials were selected by the schools as being the most convenient time to carry out the exercise, academic rating could not be identified as a variable for subsequent analysis. Tutor groups were composed of pupils of mixed academic ability and no measure of this factor had been incorporated into the design of the questionnaire. In all 310 pupils took part in the investigation in the six

schools. Full details of this phase, including major findings and an analysis of the exercise, are given in Chapter 6.

The detailed planning of each of these phases only took place in the light of the findings of its preceding exercise. The findings of each exercise were also compared with earlier results in order to identify consistencies in relationships or conflicting data. Each was important in justifying design features or pointing to modifications necessary in subsequent phases.

3.4.4 Scale Construction

The rationale for these new health locus of control scales was described earlier (3.2) with a major point being the necessity to base the items on a wider perception, or model, of health. This basic principle together with the discussions with local pupils (3.4.2) led to the identification of six constructs upon which the scales were based initially. The constructs were also chosen to represent in concrete terms the physical, mental and social dimensions of health. In addition they had often been associated with personal behaviour in adolescence and would thus help pupils to accept the relevance of the research to their lives both within and outside of school. The following constructs were selected for inclusion.

Physical fitness

Physical appearance

Acceptance by friends

Agreeing with friends

Sorting out worries

Being happy

To complement these general constructs it was decided to create situational constructs that would investigate beliefs in a behavioural context. The following situational constructs were selected for inclusion.

A fitness test for a tutor group competition

Looking good on a date

Drinking alcohol under pressure from friends

Joining in unpopular games with friends

Overcoming problems with homework

Pleasant things happening at school

The purpose of this development was to test the contention of Phares (1976) that a disposition towards internality or externality cannot in itself explain human beliefs and behaviour related to locus of control. Only through a situation-specific approach, it was argued, was it possible to descibe precisely (and perhaps predict) behaviour in this area.

Item pools were therefore constructed to incorporate both sets of general constructs and situational constructs described. For each of the twelve constructs three questions were designed, one phrased in an Internal direction, one in a Powerful Others direction, and one in a

Chance direction. Other pools of items were developed to measure the extent to which pupils valued the various constructs and also desired personal control of them. Questions were also designed to represent the sub scales of "risk taking", "valuation of good health", "newness" and "susceptibility to ill health". Finally an item pool was developed to investigate pupils' conceptualisation of health. Full details of all these scales are presented in Chapter 4 and, where modifications subsequently occurred, in Chapters 5 and 6. The design features of the questionnaire, including the response and scoring systems, are also fully described in the next chapter.

The modifications that were carried out to questions were based upon the findings of each phase of the programme. Only one general construct was changed during the entire programme. "Agreeing with friends" became "disagreeing with friends" to separate it more clearly from its fellow construct "acceptance by friends". A small number of changes were made during the programme to situational contexts, these being fully described in the following chapters.

3.4.5. Methodology

A range of research techniques was planned from the outset of the programme to be used at various stages as appropriate means of testing the measure being developed and identifying design features that would benefit from modification. The techniques are described briefly here and also more fully in the relevant section of the following chapters.

3.4.5.1 Informal Discussion with Pupils This was undertaken with groups of local pupils as a preliminary to writing the initial questions. It probed young people's concepts of

health, their valuation of health itself and some aspects of locus of control that could be associated with their health. It sought insight into how adolescents perceived their world of health and the factors in it that appeared significant to them.

3.4.5.2 Informal Discussion with Teachers The concept of health locus of control and the notion of a measuring instrument were discussed with groups of teachers attending a county INSET course (for Social and Personal Education) and also with individual teachers prior to the initial questionnaire being designed. On subsequent occasions, during the following two years, the research programme was presented to various groups of teachers and health educators at conferences and seminars. In each instance modifications were made which improved the programme and measure particularly since they reflected the views of future consumers and users of the materials.

3.4.5.3 Trialling the Questions A pool of possible questions was constructed and used as a basis for discussion with a local group of third year pupils. Issues such as readability, comprehension, choice of words and phrases, were all considered. The advice and suggestions of pupils were taken into consideration when designing the measure itself which follows.

3.4.5.4 The Questionnaire A questionnaire was selected as an appropriate measure of health locus of control, to be used

later by teachers in conjunction with other techniques such as group discussion and individual interviews with their pupils. In this programme, whilst a major thrust was the validation of the measure, it should be emphasised that other techniques, described in this section, were important components of the research and development process. Full details of the questionnaire's design features and its implementation have been given in the preceding two sections of this chapter.

3.4.5.5 Discussing the Questionnaire During the Prototype Exercise the pupils were asked for comments on the questionnaire immediately after completing it. This was carried out on a group basis and related primarily to comprehension and readability. It proved very useful in identifying specific questions which required further re-wording or re-assessment.

3.4.5.6 Structured Interviews These were undertaken with ten pupils selected at random during the Pilot Exercise phase of the research. Though the questions in the preceding section probed for difficulties of comprehension these interviews went further and investigated how pupils felt about the task of having to complete the questionnaire. Such a motivational factor is highly significant as it affects pupils' responses and points to the need for better preparation of pupils and reassurance about the task being presented to them.

3.4.5.7 Matching Concepts A construct validation exercise was designed within the Prototype phase of the programme to test whether pupils' understanding of the constructs involved were similar to those of the author and to those of a group of health professionals. It was important to establish such a common ground of thought if the data was to be interpreted accurately and acted upon with confidence in later stages of the research.

3.4.5.8 The Response System Experiment During the initial phase there appeared to be a good case for including and excluding a NOT SURE option in the response system of the questionnaire. Accordingly an experiment was designed whereby half the pupils received a questionnaire with such an option whereas the remaining pupils had no such option. The latter pupils could however select such a response by leaving all the boxes blank rather than by placing a tick in a box labelled NOT SURE. The experiment strongly supported the case for such a box being included, as indeed it was, in all subsequent phases of the programme.

3.4.5.9 Concurrent Validity Exercise This was carried out as part of the Pilot phase and involved two groups of pupils completing an established locus of control scale for adolescents. The aim was to identify the relationship between the pupils' answers to both sets of scales which would be expected to be positive if beliefs were consistent and some level of disposition held by pupils. This in fact proved to be so, as described fully in Chapter 5.

3.4.5.10 Re-Wording Exercise This activity was carried out as part of the Reliability Exercise involving an entire third year group of pupils. The re-wording exercise required a small group of pupils in another school to examine certain questions and re-word them since the questions had been shown to have low correlations with fellow items and their own particular scale.

3.4.5.11 A Card Index System Prior to the main survey being undertaken an analysis was carried out on all questions that had been used during the preceding stages. Correlations were clearly taken into account but not at the total expense of consistency of wording between items representing the same construct and also those items forming each sub scale. A card index system was devised to facilitate this analysis and led to a final version of the questionnaire being designed which incorporated readability, comprehension, consistent patterns of item wording and statistical rigour.

3.4.5.12 The Administration Experiment During the main enquiry the questionnaire was administered by the author in some schools and by teachers themselves in other schools, following prepared "Notes for Users". This experiment sought to examine whether the measure could form an independent package for use by teachers. The outcome revealed a greater likelihood of pupils making errors in response in those cases where the author was not present, this being attributed to lower teacher motivation. Since the exercise had been somewhat imposed upon the teachers involved it was

felt that teachers wishing to administer the scales in future would be more vigilant in preventing such errors than those teachers participating in this exercise.

3.4.5.13 Postal Evaluation The User's Guide (see 3.5) was sent to those teachers who had been involved in the main enquiry in order to seek their help in its evaluation. This evaluation process related to the Guide's contents and its presentation to teachers quite unfamiliar both with the concept of locus of control and its contribution to the personal development of young people.

3.4.6 Validation

It was essential that the scales be properly validated during their development in order to ensure that they were academically and statistically credible. Consequently a number of exercises was designed to pursue this objective as follows.

The early informal discussions with pupils
The construct validity exercise
The concurrent validity exercise

Each has been described during the preceding section (3.4.5) and later in the relevant chapter of the thesis. The results were quite satisfactory and gave support to the claim that the scales had been properly validated.

3.4.7 Reliability

Again it was necessary to test that the scales met agreed standards of reliability in a number of ways.

Correlations between items representing the same sub scale

Correlations between pairs of items representing the same construct

Correlations between each item and its full scale

Correlations between pairs of valuation items

Correlations between sub scales

Such analysis enabled weak items to be identified and modified by re-wording or replacement. As a result, improved levels of reliability were consistently obtained without losing the holistic nature of the scales which was an essential principle in their design. The reliability tests are described fully in the text, especially in section 6.5.5 of Chapter 6.

3.5 PLANNING FOR DISSEMINATION

Though the research and development programme, if successful, would be an achievement in itself, it would however be far more satisfying if it led to many other educators using the scales as part of their curricular activities. This objective however will only be achieved as a result of a well planned dissemination phase which publicises the scales, raises awareness of their various educational functions, creates an understanding of health locus of control and makes the scales easily available to those wishing to administer them to their own groups. Such a dissemination exercise may be pursued in a number of ways.

3.5.1 The User's Guide

This Guide has a number of aims as follows:

to explain the rationale of "health locus of control";

to describe the structure of the scales;

to explain the analysis of the questionnaires;

to help Users become aware of the potential uses of the scales;

to reduce the likelihood of the scales being misused; and

to provide a protocol for administering the scales.

This Guide is not highly prescriptive but has sufficient flexibility to create awareness of the scales' contribution to personal education whilst still enabling teachers to adapt its use to their own programmes. In this way it offers guidance and support rather than stifling innovation or self-reliance. The Guide's development is described fully in Chapter 7.

3.5.2 In-Service Training

This could take the form of workshops, seminars, contributions to INSET courses on a county basis, or school-based meetings. Each approach would enable teachers to become familiar with this research programme and the scales. Ideas could be exchanged concerning the use of the scales on an individual or group basis with pupils. Groups of schools could decide to collaborate and share both experiences and findings which could in turn result in additional scales being produced, though this would require extensive development work.

3.5.3 Articles in Publications

This would provide a much wider dissemination than that through local in-service courses and other opportunities. Exciting possibilities exist for national age group norms in health locus of control to be developed should enough educators decide to undertake small scale research of their own. This would also greatly increase the body of knowledge concerning young people's beliefs in this area of their lives.

3.5.4 Advice to Individual Teachers

This may be undertaken as part of other links with schools or as a result of a personal approach from individual teachers. The aim would be much the same as with in-service training except that the interaction and sharing of experience with fellow teachers would not be present. Nonetheless it is another opportunity which should be taken to disseminate the knowledge and materials developed from this research programme.

3.5.5 The Wider Context

It should be recognised that the health locus of control package is best viewed as a further component of the wider assessment movement in education. Together with profiling it brings new ideas and techniques into the teaching 'armoury', extending the range of skills and methods which may be applied for the benefit of the young people in schools. In addition the scales can make a valuable contribution to the process of curriculum planning and development in a formative way. The data acquired regarding pupils' beliefs and attributes can help to

identify individuals particularly vulnerable to peer group or other influences. Highly internal beliefs might suggest a lack of sociability or difficulties with personal relationships. Responses to certain questions may reveal anxiety or coping problems. The information recorded will help teachers to learn more about pupils and enable suitable programmes to be planned to meet their needs. Equally it will assist teachers in the development of activities such as role play, experiential learning or peer-led teaching for implementing the programme. Finally it will provide a rich source of knowledge about individual pupils that will enable a strategy for personal guidance to be designed and put into practice by teachers in those schools using the scales.

3.6

APPENDIX I

THE ROTTER INTERNAL-EXTERNAL CONTROL SCALE

1 a) Many of the unhappy things in people's lives are partly due to bad luck.*
b) People's misfortunes result from the mistakes they make.

2 a) One of the major reasons we have wars is because people don't take enough interest in politics.
b) There will always be wars, no matter how hard people try to prevent them.*

3 a) In the long run people get the respect they deserve in this world.
b) Unfortunately, an individual's worth often passes unrecognised no matter how hard he tries.*

4 a) The idea that teachers are unfair to students is nonsense.
b) Most students don't realise the extent to which their grades are influenced by accidental happenings.*

5 a) Without the right breaks one cannot be an effective leader.*
b) Capable people who fail to become leaders have not taken advantage of their opportunities.

6 a) No matter how hard you try some people just don't like you.*
b) People who can't get others to like them don't understand how to get along with others.

7 a) I have often found that what is going to happen will happen.*
b) Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

8 a) In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
b) Many times exam questions tend to be so unrelated to course work that studying is really useless.*

9 a) Becoming a success is a matter of hard work, luck has little or nothing to do with it.
b) Getting a good job depends mainly on being in the right place at the right time.*

10 a) The average citizen can have an influence in government decisions.
b) This world is run by the few people in power, and there is not much the little guy can do about it.*

11 a) When I make plans, I am almost certain that I can make them work.
b) It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyway.*

12 a) In my case getting what I want has little or nothing to do with luck.
b) Many times we might just as well decide what to do by flipping a coin.*

13 a) Who gets to be the boss often depends on who was lucky enough to be in the right place first.*
b) Getting people to do the right thing depends upon ability; luck has little to do with it.

14 a) As far as world affairs are concerned, most of us are the victims of forces we can neither understand nor control.*
b) By taking an active part in political and social affairs the people can control world events.

15 a) Most people don't realise the extent to which their lives are controlled by accidental happenings.*
b) There really is no such thing as "luck".

16 a) It is hard to know whether or not a person really likes you.*
b) How many friends you have depends upon how nice a person you are.

17 a) In the long run the bad things that happen to us are balanced by the good ones.*
b) Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

18 a) With enough effort we can wipe out political corruption.
b) It is difficult for people to have much control over the things politicians do in office.*

19 a) Sometimes I don't understand how teachers arrive at the grades they give.*
b) There is a direct connection between how hard I study and the grades I get.

20 a) Many times I feel that I have little influence over the things that happen to me.*
b) it is impossible for me to believe that chance or luck plays an important role in my life.

21 a) People are lonely because they don't try to be friendly.
b) There's not much use in trying too hard to please people, if they like you, they like you.*

22 a) What happens to me is my own doing.
b) Sometimes I feel that I don't have enough control over the direction my life is taking.*

23 a) Most of the time I can't understand why politicians behave they way they do.*
b) In the long run the people are responsible for bad government on a national as well as on a local level.

* Represents externally awarded item.

Scoring is based upon totalling how many of these items were selected.

APPENDIX II

THE MULTIDIMENSIONAL HEALTH LOCUS OF CONTROL SCALES

FORM A

1 If I get sick, it is my own behaviour which determines how soon I get well again.

2 No matter what I do, if I am going to get sick, I will get sick.

3 Having regular contact with my physician is the best way for me to avoid illness.

4 Most things that affect my health happen to me by accident.

5 Whenever I don't feel well, I should consult a medically trained professional.

6 I am in control of my health.

7 My family has a lot to do with my becoming sick or staying healthy.

8 When I get sick I am to blame.

9 Luck plays a big part in determining how soon I will recover from an illness.

10 Health professionals control my health.

11 My good health is largely a matter of good fortune.

12 The main thing which affects my health is what I myself do.

13 If I take care of myself, I can avoid illness.

14 When I recover from an illness, it's usually because other people (e.g. doctors, nurses, family, friends) have been taking care of me.

15 No matter what I do, I'm likely to be sick.

16 If it's meant to be, I will stay healthy.

17 If I take the right action, I can stay healthy.

18 Regarding my health, I can only do what my doctor tells me to do.

Wallston & Wallston 1978

APPENDIX II

THE MULTIDIMENSIONAL HEALTH LOCUS OF CONTROL SCALES

FORM B

1 If I become sick, I have the power to make myself well again.

2 Often I feel that no matter what I do, if I am going to get sick, I will get sick.

3 If I see an excellent doctor regularly, I am less likely to have health problems.

4 It seems that my health is greatly influenced by accidental happenings.

5 I can only maintain my health by consulting health professionals.

6 I am directly responsible for my health.

7 Other people play a big part in whether I stay healthy or become sick.

8 Whatever goes wrong with my health is my own fault.

9 When I am sick, I just have to let nature run its course.

10 Health professionals keep me healthy.

11 When I stay healthy, I'm just plain lucky.

12 My physical well-being depends on how well I take care of myself.

13 When I feel ill, I know it is because I have not been taking care of myself properly.

14 The type of care I receive from other people is what is responsible for how well I recover from an illness.

15 Even when I take care of myself, it's easy to get sick.

16 When I become ill, it's a matter of fate.

17 I can pretty much stay healthy by taking good care of myself.

18 Following doctor's orders to the letter is the best way for me to stay healthy.

Wallston & Wallson 1978

APPENDIX III

CHILDREN'S HEALTH LOCUS OF CONTROL

1 Good health comes from being lucky.

2 There is nothing I can do to keep from getting sick.

3 Bad luck makes people get sick.

4 I can only do what the doctor tells me to do.

5 Getting sick just happens.

6 People who never get sick are just plain lucky.

7 It is my mother's job to keep me from getting sick.

8 Only a doctor or a nurse keeps people from getting sick.

9 I can make very few choices about my health.

10 Accidents just happen.

11 I can do many things to fight illness.

12 Only the dentist can take care of my teeth.

13 The only way I can stay healthy is to do what other people tell me to do.

14 I always go to the nurse right away if I get hurt at school.

15 It is the teacher's job to keep me from having accidents at school.

16 I can make many choices about my health.

17 If I feel sick, I have to wait for other people to tell me what to do.

18 Whenever I feel sick, I go to see the school nurse right away.

19 There is nothing I can do to have healthy teeth.

20 I can do many things to prevent accidents.

Parcel & Meyer 1978

CHAPTER 4

THE PROTOTYPE EXERCISE

4.1 INTRODUCTION

The rationale and purpose of the research project were described earlier in chapter three. Based upon the premise of health being a balanced combination of physical, social and mental dimensions the constructs identified for research were considered to be representative of such a tripartite network. In order to test the feasibility of the research project it was decided to construct a measuring instrument that would incorporate the six general constructs together with a situational application of each of them. At the same time an opportunity would be presented for the inclusion of the factors (e.g. risk taking, deferred gratification) often associated with the locus of control variable.

4.2 AIMS

The major aims of the instrument devised were to:

(i) identify any problems of completing a series of questions associated with the constructs in question

(ii) check whether respondents had any difficulty in understanding the questions or concepts involved

(iii) develop an administration protocol for the instrument

(iv) seek internal consistencies between questions probing the same and different constructs

(v) identify problems associated with the response system

(vi) identify positive and negative associations between the

variables incorporated in the instrument.

(vii) identify any questions that could be eliminated from the instrument as a result of significant correlations with other questions.

(viii) establish any significant differences between academic and gender groups

(ix) clarify pupils' perceptions of health

(x) identify the personal valuation system of pupils with regard to the constructs in question

(xi) investigate how pupils perceive the six general constructs as a validation of their use in this instrument

(xii) Validate the general constructs being researched.

The general purpose of designing and administering this prototype enquiry was primarily to test its applicability to the pupils for whom it was intended. Whilst it incorporated both a validation and reliability component it was in reality an initial attempt to check that pupils could give considered answers to a series of questions covering a range of personal characteristics and issues. The intention was to learn from the research and it was accepted from the outset that very few claims could be made from any results due to the exploratory nature of the exercise.

4.3 RESEARCH DESIGN

4.3.1. The Constructs

Six constructs were selected to represent the physical, social and mental dimensions of health. Each construct was chosen as it involved significant characteristics contributing to personal growth and development. The constructs to be investigated were:

1. Physical fitness
2. Physical appearance (looking good to others)
3. Acceptance by friends
4. Conformity (agreeing with friends)
5. Reaction to anxiety (sorting out worries)
6. Contentment (being happy)

Terms in parentheses indicate the phrases used in the measuring instrument to facilitate pupil understanding, particularly in view of the range of academic standard forming the sample population.

In addition to these general constructs it was decided to incorporate a number of questions which focused upon the constructs in specific behavioural contexts. These situational constructs related to:

1. A test of fitness for a tutor group competition
2. Looking good on a date
3. Drinking alcohol under pressure from friends
4. Joining in unpopular games with friends
5. Overcoming problems with homework
6. Pleasant things happening at school

The purpose of this development was to test the contention of Phares (1976) that a general disposition towards internality or externality cannot in itself explain sufficiently human beliefs and behaviour related to locus of control. Only through a situation-specific approach, it was argued, was it possible to describe precisely (and perhaps predict) behaviour in this domain. Subsequently analysis would therefore examine the relationship between responses of individuals and groups to appropriate questions incorporating the respective general and specific constructs.

In addition to the collection of contructs included the questions were also designed to reflect the three aspects of 'locus of control' described in chapter one.

(i) internality

(ii) chance

(iii) powerful other people

Thus the statement "being physically fit is a matter of luck" would relate to the "chance" factor whereas "I can do much to make myself look good to others" would reflect the "internality" category.

In this prototype exercise the combined questions contained all three variations for each construct though subsequent analysis may demonstrate the possibility of elimination. At this stage it could not be assumed that a positive response to a construct phrased as "chance" would be accompanied by a negative response to its phrasing in the "internality" mould. The various questions for each construct were not sequential but randomly placed among those questions involving the other constructs. In question two, however, the variations were clustered in order to avoid a repeated description of the situation being discussed.

4.3.2 The Measuring Instrument

The questionnaire designed for use in this prototype exercise is shown in Appendix I and II. The front page was intended as a means of giving instructions for the successful completion of the exercise as well as recording a limited range of personal information. The following features of this introductory page were included:

1. The title "GOOD HEALTH SURVEY" was employed rather than anything associated with "LOCUS OF CONTROL" which might have produced unnecessary anxiety amongst the pupils.
2. The name of the school. Though only one school was involved in this project the use of a larger population sample in future would necessitate this variable for inter-school analysis and comparison.
3. Tutor group. As the pupils were in academic groups this title should be altered to include an academic classification.
4. Gender. This was included for male/female categorisation both within and between groups.
5. Date of Birth. Such a personal identification may be used to match with any re-test or comparative test. The use of this technique made it possible to retain confidentiality and encourage maximum co-operation from respondents.
6. A short paragraph reassuring pupils that the exercise was not a test and then thanking them for their help.
7. An explanation of the response system included in the instrument to facilitate discrimination between the various categories.
8. A sample question for trial to familiarise pupils with the style of question involved and response system.

4.3.3 The Response System

It was decided to adopt one style of response if possible throughout the questionnaire to avoid any confusion or misunderstanding about the answering procedure. In fact all questions (1 - 5) relating to LOCUS OF CONTROL were included in a standardised response format and only the latter two questions (6 and 7), relating to other associated factors, adopted alternative styles.

A six point scale was initially selected to permit sufficient discrimination to be demonstrated by pupils in their agreement or disagreement with various statements. This discrimination process was aided by the written instructions on the front page and the verbal introduction by myself. An instruction was given on each page of the questionnaire to "place a tick in one box on each line". Again this requirement was reinforced during the verbal introduction given to each group.

An important issue in the response system had been whether to include a neutral response option such as "DON'T KNOW". On the one hand there may be pupils who are really uncertain as to their views on particular matters who need such an option if invalid responses are not to be given. On the other hand the availability of such an option may militate against due consideration being given to one's true feelings on an issue.

It was therefore decided to carry out an experiment within this research exercise by incorporating a "NOT SURE" column into 50% of the questionnaires in order to examine its usage. The pupils were also told in the verbal introduction to leave a blank if they were not sure

of their feelings in any question. Therefore by comparing the number of blank responses in one set of questionnaires against the number of "NOT SURE" responses in the other set it would be possible to evaluate the need for this "NOT SURE" column in any future development work.

In order to ensure an equal split of male/female pupils completing each type of questionnaire, the two variations were alternated within the stockpile. The distribution (all girls first, then all boys) ensured equal representation from both gender groups.

4.3.4 The Questions

Question 1 contained 18 statements in all. Each of the 6 general constructs described earlier in this section were represented by 3 statements. Each statement was phrased in one of the moulds (also described earlier) to represent "internality", "chance", or "powerful others". The 18 statements were randomly interwoven to avoid any response tendency associated with grouping.

Question 2 contained the 6 situational constructs. Below the description of each situation 3 statements were placed, representing decision-making options. The instructions given were to answer EACH option rather than select from them. In each situation the 3 options reflected the "internality", "chance" and "powerful others" moulds.

Question 3 was an attempt to assess pupils' evaluation of the 12 constructs used in questions 1 and 2. They were asked to respond to the statement "These things are very important to me" followed by a list of the constructs. The exact wording of constructs was identical to the preceding questions in order to avoid any misunderstanding or inconsistency.

Question 4 investigated the motivational desire of pupils towards control of the six basic constructs employed in question 1. The major statement "I would like to be able to control" was followed by a list of the constructs. As with other questions a response was requested for each category.

Question 5 contained 12 statements representing factors such as rating of risk taking, valuation of health as an attribute, concept of newness, and an acknowledgement of the link between present behaviour and probability of good or ill health. The results of this question would not only be of interest in themselves but also provide a valuable correlational test with the locus variable with which they have been associated in other research (Phares 1976, Lefcourt 1981).

Question 6 sought to identify the pupils' perception of "health". The statement "What does HEALTH mean to you?" was followed by 22 short definitions covering physical, social and mental aspects of health. Pupils were invited to tick any of the statements together with the opportunity to add under "other" category any further concepts held. A reminder was given in the question that pupils could select more than one definition if they so wished to avoid any restriction on the range of perceptions shown to be held.

Question 7 was an attempt to validate the constructs being investigated. Pupils were asked to present their understanding of the six basic constructs by responding to the statement "What do you understand by the term?" It was hoped that this would reveal difficulties of comprehension, unusual connotations or conflict with definitions held by the research designer and fellow professionals.

4.3.5 The Scoring Procedure

Questions 1 to 5 inclusive were arranged in a standardised format with pupils being requested to make a response to 66 sub questions in all.

As already described an attempt was made to evaluate the inclusion of a "NOT SURE" column by having such a variation in one form of the questionnaire but not in the other. In effect therefore some pupils (38) completed test A (six response options) and other pupils (34) completed test B (seven response options incorporating a "NOT SURE" column). In every other respect the two questionnaires were identical.

Both groups in fact were able to select a "NOT SURE" option since the verbal introduction to the exercise emphasised that if pupils were uncertain of their reactions to any question they could leave all the boxes blank. In essence this meant that one group could demonstrate a "NOT SURE" response by leaving all boxes blank whereas those pupils completing test B could demonstrate such a response with a tick in the "NOT SURE" column. The experiment was therefore specific to the effect of the column's existence or omission rather than the pupil's actual belief system.

The scores allocated ranged from 7 to 1 in the direction from strongly agree to strongly disagree. Statements had been designed to identify strength of belief in a number of variables without any value judgement being made of them. Only two statements in question 5 (5.2 and 5.7) were framed in a negative direction to support for the construct in question. In both instances the scoring system was reversed from 1 to 7 in the direction strongly agree to strongly disagree.

Those completing test A were allocated 4 if they made no response to any question. Similarly those completing test B were allocated 4 if they placed a tick in the "NOT SURE" column. This enabled all neutral responses (for whatever reason) to be allocated a consistent score in the recording process and subsequent computerisation exercise.

Question 6 investigated pupils' perception of health by seeking responses to each of 22 suggested definitions of health. The scoring system for this question was of a "yes - no" nature reflecting the range of positive responses given by each pupil. This would give a view of health conceptualisation without necessarily correlating to the LOCUS OF CONTROL component. It would mainly be of interest in showing whether pupils accept the mental and social dimensions of health and whether this is associated with an academic or gender classification.

Question 7 again stood somewhat aside from the main LOCUS or CONTROL thrust and would be factor analysed to validate the constructs being employed in the research programme. The responses were not allocated a score but would contribute to the validation of the measuring instrument.

4.3.6 The Sample Population

Due to the exploratory nature of this prototype exercise an opportunity sample of pupils was obtained by approaching a local secondary school for permission to undertake the research. Thus whilst not being a random sample there was no reason to believe that the pupils would behave any differently than in any other school. They had not been forewarned of the impending exercise so, to my knowledge, had not

been encouraged to act in any special manner towards the task. To all intents and purposes therefore the results would represent the pupils reaction exactly as if this school had been selected completely at random.

The measuring instrument was designed for use with third year pupils aged 13/14 years. Young people of this age are sufficiently mature to confidently express their views, have encountered peer group pressures to conform to certain behavioural patterns yet still retain the childhood delight in each new day. Though the instrument could easily be adapted for use with older adolescents the constructs incorporated would probably be inappropriate with a younger population.

The initial request to the school was for permission to carry out the research with a group of mixed ability pupils in the third year. This would then allow for the inclusion of academic rating as a variable for analysis. In the event the school offered the opportunity of three groups since the school setting system precluded mixed ability grouping. The three groups offered ranged in academic ability across the full spectrum of the third year and was, therefore, accepted gratefully though forming a larger sample than originally intended. In all, 72 pupils took part in the research project (32 male and 40 female). The groups were not of equal size being 28, 26 and 18 in number respectively. The higher ability group was composed of the largest number of pupils whilst the lowest ability group contained the smallest number. The Groups are described in this chapter as A, B and C in academic rating order from high to low ability.

4.4 ADMINISTERING THE QUESTIONNAIRE

Three groups had been selected by the school to complete the questionnaires on the morning of Tuesday 8 May 1984.

Though some variation was inevitable the programme for each group was predominantly as follows:

Introduction

The purpose of the exercise was briefly explained in terms of our interest in young people's beliefs about their health. A number of points were stressed in this phase.

(i) The exercise is not a test.

(ii) There are no right or wrong answers, merely differences of opinions.

(iii) Each pupil should express his(her) own personal opinion.

(iv) No names are required. This was an attempt to encourage everyone to express their true feelings.

(v) No report of the findings will be made to the school or anyone known to the pupils.

(vi) Every question should be attempted.

(vii) If unable to answer a question for any reason then boxes should be left blank rather than a false response made.

(viii) The description of the response system had been identified on the front page of the questionnaire. The definition of categories was reinforced and pupils asked if they understood the criteria for selecting appropriate options.

(ix) Each tick to be placed inside the box in question.

(x) In the event of someone changing their mind the original box should be blocked out fully and the tick then placed within the new box selected.

(xi) The pupils were thanked at this stage and asked to complete the front page. When all had carried out this phase the groups were invited to complete the full questionnaire in their own time.

Responding

Whilst the forms were being filled every effort was made to prevent any inter-pupil discussion or communication. On occasions a quiet reminder was given but generally pupils complied with the request given in the introduction. As there was considerable variation in the time taken for completion, the pupils upon finishing were invited to carry out a written exercise on the back of the final page of the questionniare. This was simply using the letters of the word HEALTH to form other words related to health beginning with any of the 6 letters. The exercise retained the interest of the pupils besides avoiding the distraction of those pupils still completing their questionnaire.

Evaluation

The pupils were asked whether they had experienced difficulties with the response system and then each question. The results of this subjective, verbal evaluation are shown in the following section.

The pupils were then thanked again for their help with the exercise and asked to remember the value of health in their future pattern of life.

The time taken for the final pupil in each group to complete the exercise was Group A (30 minutes), Group B (27 minutes) and Group C (25 minutes). This allowed about the same amount of time with each group for evaluation which was approximately 15 minutes.

4.5 RESULTS OF THE EVALUATION WITH PUPILS

The table below shows the analysis of questions which pupils stated caused difficulty in comprehension and hence ability to respond.

Question	1.1	1.2	1.3	1.8	1.15	2.3a	2.3b	2.5	3.7	4.1	4.3	4.5
Number of pupils having difficulty	6	1	2	1	13	1	2	10	2	1	1	1

Question	5.7	7a	7b	7c	7d	7e	7f
Number of pupils having difficulty	9	7	9	7	6	17	6

Questions 1.1, 1.15, 2.5 and 5.7 will clearly need to receive further attention in terms of wording, objectives and contribution to the total instrument. Question 7 undoubtedly presented problems for some pupils. This was a validation exercise and will not form part of the next phase of the research programme.

In addition two other sets of results concerning the exercise were recorded with pupils verbally immediately following completion of the questionnaires:

(i) 6 pupils had some difficulty in understanding and selecting from the responses used (strongly agree to strongly disagree).

(ii) 2 pupils in Group B were reminded that all options in

question 2 had to be answered. In Group A 11 pupils at first only responded to one option but upon re-reading had answered all three options in each question.

A number of pupils in each group quickly noticed that colleagues had a different response system to their own due to the experimental use of the "NOT SURE" column. The groups were therefore reassured by the administrator that this was the only difference in the questionnaire and that in all other respects they were completing identical forms. It is to be hoped that any suspicions aroused by this variation were allayed and in no way biased the reactions of the pupils.

Discussion Of The Evaluation With Pupils

This was a valuable exercise in so far as it provided immediate feedback from consumers i.e. those for whom the project was designed. In addition to the objective results to be analysed by computer it was possible to get a feel of the psychological response of the pupils. In this respect the questionnaire would benefit from reduction for 30 minutes was rather a long time for the less able pupils, in particular, to concentrate. In fact one of the main aims of the exercise was to demonstrate sufficient inter-question reliability to justify elimination of items or formulation of parallel forms of the instrument.

The "NOT SURE" experiment was for this prototype phase only and should not therefore cause any similar suspicion on the part of pupils in future. Either it will be included on, or excluded from, all questionnaires according to the outcome of this investigation.

Question 2 with its three variations of response presented difficulties for some pupils. Its form will need re-appraisal both in the light of its layout, the instructions given and the subsequent analysis of responses vis a vis respective options.

At this stage I would not wish to change the procedure of the administration or the subjective pupil evaluation. In fact a more structured evaluation is planned for the piloting phase through personal interview of pupils in order to gain greater detail of the respondent's perception and feelings of the experience.

4.6 THE COMPUTER PROGRAMME

The SPSS MULTICS system was selected to compute the various categories of data which had been collected in the prototype exercise. In addition to recording the 4968 individual responses there was also a need to undertake a number of statistical analyses both within and between groups of data which could be carried out more efficiently by the computer programme (Appendix IV).

Among the major aims of the computerised statistical analyses were to:

1. Confirm the existence of the three basic scales - "internality", "chance" and "powerful others".
2. Carry out internal consistency tests on the twelve constructs (six specific and six general) and the three scales.
3. Correlate the three alternative responses to each of the twelve constructs.
4. Compare the association between the respective specific and

general questions related to each construct.

5. Facilitate the elimination of questions in the light of the analyses undertaken.
6. Correlate the valuation of constructs with "internality", "chance" and "powerful others" scales.
7. Correlate valuation of constructs with desire for control of corresponding constructs.
8. Confirm the existence of sub scales "newness", "risk taking", "susceptibility" and "good health".

THE FINDINGS

4.7 THE FINDINGS

4.7.1 The INTERNAL Scale

Questions 1.1, 1.4, 1.6, 1.8, 1.15, 1.17, 2.1b, 2.2a, 2.3b, 2.4c, 2.5b and 2.6b refer.

Mean scores for each of the 12 questions (by group and gender) are shown in Table 3 whilst correlations between questions (items) are shown in Table 7.

4.7.1.1 43 positive correlations (10 significant*) were established and 23 negative correlations (none significant). An alpha reliability of .39 was computed for the scale.

4.7.1.2 Question 1.8 (Appearance) had the most significant correlations (4) with other items in the scale.

4.7.1.3 This scale had a higher overall mean score (60.1) than the CHANCE scale (44.0) or POWERFUL OTHERS scale (54.2).

4.7.1.4 5 of the 6 correlations between the INTERNAL general and specific contructs (Table 6) were positive (2 significant) with 1 negative correlation (acceptance by friends) - not significant.

4.7.1.5 I Group A scored higher than group C in 9 of the 12 items (Table 3).

II The scale mean for group A was 59.6 as opposed to 58.4 for group C (Table 2).

* r = .232 and above (N = 72)

III Group A scored higher than group B in 7 of the 12 items (Table 3).

IV Group B scored higher than group C in 9 of the 12 items.

4.7.1.6 I Males scored higher than females in 7 out of 11 items with 1 even (Table 3).

II The scale mean for males was 61.1 as compared with 59.2 for females.

III Group C females were primarily responsible for the low group C score. Their overall scale mean was 56.1 compared with 59.9 for group A females.

IV Group C males scored 61.4 compared with 59.2 for group A males.

Discussion

4.7.1.7 The results would appear to support the existence of the scale in view of the number of positive correlations between items (Table 7), the alpha reliability and the positive correlations between general and specific constructs (Table 6) e.g. the tendency towards internality in response to fitness in general (question 1.1) is associated ($r = .164$) positively with a tendency towards internality with regard to a fitness test for a tutor group competition (question 2.2a).

4.7.1.8 There is evidence of an association with academic rating insofar as the higher ability group (A), as determined by the school's setting system, scored consistently higher than group C.

4.7.1.9 Of more importance however would appear to be gender since it was the females of group C who were responsible for the group's low score on INTERNALITY.

4.7.1.10 Low academic ability (or rating) seems to have a more marked effect on females than males with regard to INTERNALITY since their male counterparts scored slightly better than the males of high academic ability. Such a specific effect is worthy of futher investigation for its confirmation would enable a precise social education programme to be undertaken.

4.7.2 The POWERFUL OTHERS Scale

Questions 1.3, 1.10, 1.11, 1.12, 1.13, 1.14, 2.1c, 2.2b, 2.3a, 2.4b, 2.5a and 2.6c refer.

Mean scores for each of the 12 questions (items), by academic group and gender are shown in Table 5 whilst correlations between the 12 items are shown in Table 9.

4.7.2.1 Out of 66 correlations 48 were positive (7 significant*) and 17 negative (none significant) with 1 neutral. An alpha reliability of .47 was computed.

4.7.2.2 Question 1.11 (sorting out worries) contained 3 of the significant correlations out of 8 positive correlations with other items.

4.7.2.3 Table 6 shows that 5 positive correlations out of 6 were established for POWERFUL OTHERS construct items which correspond with each other in a general and specific context.

4.7.2.4 The one negative correlation related to items representing the "acceptance by friends" construct.

* r = .232 and above (N=72)

4.7.2.5 i) Group C scored higher than group A on 6 out of 11 items with 1 even.

ii) Group B scored higher than group C on 4 out of 7 items with 5 even.

iii) Group A scored higher than group B on 7 items out of 12.

4.7.2.6 The mean scores for the full scale were similar for the three groups with group B (54.4), group C (53.9) and group A (53.6) - Table 2.

4.7.2.7 The mean scores for the full scale were similar for gender groups with females (54.3) and males (53.6) - Table 2.

4.7.2.8 Females scored higher than males in 6 out of 10 items with 2 even (Table 5).

4.7.2.9 Group C females had the highest mean (55.8) of all the sub groups. Group A females scored very similarly to group A males.

Discussion

4.7.2.10 The results of correlations between items, the alpha reliability and the association between corresponding items in the same construct provide evidence of the scale's existence.

4.7.2.11 The two negative correlations established for items related to the construct "acceptance by friends" (Table 6) appear to

suggest the need for modifications to the items in question.

4.7.2.12 No clear evidence was shown of a general association with academic ability.

4.7.2.13 A specific association was identified between the POWERFUL OTHERS scale and low academic ability in females.

4.7.2.14 This is consistent with the CHANCE scale findings for both scales may be perceived as specific sub divisions of an externality tendency or disposition.

4.7.2.15 The results may again reflect a mechanism by which low ability females retain self esteem and respect. It might also be that group A females are more selective in their acceptance of powerful other people. The academic success may place less pressure upon them to apportion responsibility for life events.

4.7.2.16 A greater number of positive correlations at higher levels of significance would probably result from re-wording some items to represent greater dependency upon POWERFUL OTHERS. The existing wording often fails to reflect such dependency and may be construed as an action of internality by making selective use of other people.

4.7.3 The CHANCE Scale

Questions 1.2, 1.5, 1.7, 1.9, 1.16, 1.18, 2.1a, 2.2c, 2.3c, 2.4a, 2.5c, and 2.6a refer.

Mean scores for each of the 12 questions, by academic group and gender, are shown in Table 4 whilst correlations between the 12 items are shown in Table 8.

4.7.3.1 Of the 66 correlations between scale items 61 were positive (25 significant*) and 5 negative (none significant). An alpha reliability of .75 was computed for the scale.

4.7.3.2 Question 2.6a (contentment) contained 9 significant correlations out of 11 positive correlations with other scale items.

4.7.3.3 All 6 constructs correlated positively between corresponding CHANCE items in a general and specific context (Table 6). Of these correlations 4 were significant.

4.7.3.4 I Group C scored higher than group A in 8 out of 11 items with 1 even (Table 4).

II Group B scored higher than group A in 7 out of 10 items with 2 even.

III Group C scored higher than group B in 8 out of 9 items with 3 even.

* r = .232 and above (N=72)

4.7.3.5 Group C had a higher mean score (48.1) than group B (43.2) and group A (41.2) - Table 2.

4.7.3.6 Males scored higher than females in 6 out of 9 items with 3 even (Table 4).

4.7.3.7 Males had a higher mean score (44.6) than females (42.9) - Table 2.

4.7.3.8 Group C females had a higher mean score (52.3) than any other sub group. Group A females scored 40.5 and group B females 39.0.

4.7.3.9 Group C males scored 42.7 as opposed to 42.4 for their counterparts in group A. Males in group B recorded a much higher score at 47.5 (Table 2).

Discussion

4.7.3.10 The results clearly support the existence of the scale from the correlations established between CHANCE items as a whole, the alpha reliability and the corresponding general - specific CHANCE items relating to each of the 6 constructs (Table 6).

4.7.3.11 The correlations are sufficiently high to justify the scale whilst still permitting enought latitude to support the view (Lefcourt 1981) that although a disposition exists, specificity of context must be used in research and educational practice.

4.7.3.12 The consistent association between academic status and CHANCE scores supports the notion of an inverse relationship between CHANCE tendency and high ability or rating.

4.7.3.13 Group C females clearly attribute much of their experiences and feelings to CHANCE factors. The results demonstrate a two fold tendency towards the scale which incorporates both academic ability and gender. Each tendency appears to have an independent existence but also increase their effect in partnership.

4.7.3.14 Group C females would seem to again stand out from other pupils. Perhaps the CHANCE tendency is a means of rationalising perceived failure in academic life by attributing it to factors beyond personal control. Whether or not CHANCE is evaluated by teachers highly or lowly vis a vis INTERNALITY, the ability to identify and quantify the tendency provides an opportunity for educational intervention, if considered appropriate, with more justification than hitherto.

4.7.3.15 Group C males do not demonstrate the high CHANCE tendency of their female colleagues whereas males in group B do. Is it that group C males differ in their perception of their world? Do they have less need to attribute causality to extraneous factors? Is it group B males who have such needs to rationalise because they are nearer to the successful males and therefore sense their 'failure' more deeply?

It is hoped that future development of this research programme will address such issues and illuminate one or two of the hidden answers.

4.7.4 The RISK TAKING Scale

Questions 5.1 and 5.5 refer. Correlations are shown in Table 16 and scale means in Table 2.

Results

4.7.4.1 All three academic groups scored highly on questions 5.1 (Table 1).

4.7.4.2 Comparatively low mean scores were recorded by all three groups in response to item 5.5. (Table 1).

4.7.4.3 The correlation established was very slightly positive (.024) between these two items.

4.7.4.4 The low correlation is surprising for those rating new experiences as exciting were expected to have viewed non risk takers as boring. This may reflect a high level of tolerance held by all pupils or the fact that new experiences are not necessarily synonymous with risk taking. Risk taking may be perceived by pupils as "in the eyes of the beholder".

4.7.4.5 Taking both questions together group C had the highest mean score (10.0) followed by group B (9.9) and group A (9.1).

4.7.4.6 Group C males were mainly to account for this differential between academic groups, having a mean score of 10.4 compared with 8.9 for group A males. This may well indicate a tendency towards higher rating of risk taking by low ability

males but requires confirmation through further research involving modified items (in the light of the low correlations established).

4.7.5 The SUSCEPTIBILITY Scale

Questions 5.2, 5.6, 5.10 and 5.12 refer. Correlations are shown in Table 17 and scale means in Table 2.

Results

4.7.5.1 A significant* positive correlation was established between questions 5.2 and 5.6.

4.7.5.2 A significant positive correlation was found between questions 5.10 and 5.12.

4.7.5.3 There was almost a significant positive correlation (.231) between questions 5.6 and 5.12.

4.7.5.4 A small negative correlation was shown between questions 5.2 and 5.10.

4.7.5.5 Group A recognised and accepted the relationship between personal behaviour and likelihood of good or ill health in future (susceptibility) more than group C (mean score for scale 23.2 to 21.6).

Discussion

4.7.5.6 It would appear that a tendency exists with regard to this factor from the correlations established.

* r = .232 and above (N=72)

4.7.5.7 An interesting point to note is that the correlation between items 5.2 and 5.6 (result 4.7.5.1 above) combines the recognition of susceptibility with an evaluation of outcome. Not only do pupils accept the existence of a relationship between present behaviour and future ill health but they also identify a concern for such a result involving themselves.

4.7.6 The GOOD HEALTH Scale

This scale is represented by questions 5.3, 5.4, 5.8 and 5.9. Correlations are shown in Table 18 and scale means in Table 2.

Results

4.7.6.1 Significant positive correlations were established between questions 5.3, 5.4 and 5.8.

4.7.6.2 Question 5.9 stood alone, being negatively associated with questions 5.3 and 5.4 and marginally positive with question 5.8.

4.7.6.3 There was very little difference in scale means for the three academic groups.

4.7.6.4 Males scored higher than females both in total (24.8 - 23.7) and within groups (group A:- 24.8 - 23.8 and group C: - 25.5 - 24.1).

Discussion

4.7.6.5 Question 5.9 did not correlate well as, upon reflection, it appears to relate equally to risk taking or newness as to a valuation of good health.

4.7.6.6 Question 5.8 had a high mean score (6.0 - Table 1) as it was very positively phrased. It would be probably more discriminating if phrased negatively in the next research phase.

4.7.6.7 A consistent male - female differential was apparent in all three academic groups with males recording a higher appre-

ciation of good health. Such a finding would be worthy of confirmation in subsequent research.

4.7.7 The NEWNESS Scale

This scale is represented by questions 5.1, 5.7 and 5.11. Scale means are shown in Table 2 and correlations in Table 19.

Results

4.7.7.1 All the correlations were marginally positive but with no significance.

4.7.7.2 Group A scored higher than group C both in total and within gender. Group B did not conform to the pattern, scoring lower than group C.

4.7.7.3 Males scored marginally higher than females.

Discussion

4.7.7.4 The lack of significant correlations suggests that the questions are not representing a common scale and therefore need re-wording. The evaluation with pupils (section 4.5) showed that 9 pupils had difficulty in understanding question 5.7 whilst question 5.11 was an introspective approach perhaps beyond the developmental stage of 14 year old pupils.

4.7.7.5 The tendency for higher ability children to score higher is an interesting finding which requires further investigation. If confirmed it may represent a need to cope with academic stress by temporary escape or a mechanism for relating to low ability colleagues on equal terms. The assumption that low ability pupils would be more attracted to new experiences is not borne out by this enquiry though any interpretation must be tempered by the need to modify the scale items.

4.7.8 CONCEPTS of HEALTH

Question 6 refers.

4.7.8.1 The most popular response to the 22 concepts listed was that pertaining to "being fit" which received 67 nominations.

4.7.8.2 The second most popular response was for "feeling good" which was selected by 59 pupils. This social psychological dimension is clearly recognised by the pupils as being associated with health, reinforced also by the popularity of the concept "enjoying life" (46).

4.7.8.3 The medical model of health was represented by the concepts "not being ill" and "not having disease". Both were accepted as legitimate by 51 and 37 pupils respectively.

4.7.8.4 A prescriptive approach to health was strongly rejected by pupils as evidenced by the response to "obeying rules" (1) and "doing what you are told" (3).

4.7.8.5 The positive aspects of the mental health dimension were well represented by "being happy" (46), "enjoying life" (46) and "feeling good" (59). The somewhat negative aspect of mental health ("not having worries") was much less popular in being selected by only 25 pupils.

4.7.8.6 An interesting group of concepts related to the notion of 'achievement' both in a personal and social capacity. The personal component was represented by "being good at things" (17) and the social component by "being liked by people" (21)

"having good friends" (23) and "being admired" (11). Whilst not being significant as a total response the intergroup comparisons are quite revealing:

CONCEPT	GROUP A	GROUP B	GROUP C	A - C
Being good at things	4	2	11	.72
Being liked by people	4	4	13	.80
Having good friends	7	3	13	.67
Being admired	3	0	8	.64

Though group B varied somewhat in its position group C consistently scored higher than Group A in spite of being much smaller in size. A tetrachoric test established high correlations between low academic ability and the acceptance of these concepts of health.

4.7.8.7 15 responses were made to the "other" category in this question (see Table over). The majority relate either to body care (e.g. food, rest), peer group relationships or a satisfying life (e.g. happy to be alive). Nothing particularly significant appears to have been identified by the inclusion of this option, suggested that the concepts listed incorporated the pupils' perceptions of health quite adequately.

OTHER CONCEPTS OF HEALTH

	Number of times Suggested
Happy to be alive	1
A good and long life	1
Not smoking	2
Being the correct weight	1
Good appetite	1
Proper Food	2
A good figure	1
Resting	1
Being good at sports	1
Being accepted by friends	1
Having a good laugh with friends	3
	15

Discussion

4.7.8.8 It would appear desirable to retain the 22 concepts of health, described earlier, in the next phase of the research programme. There would be relatively little difficulty in re-designing this question to match the standarised response format of other questions. In fact this would help to produce a more precise discrimination of responses and enable a further examination of these initial results to be undertaken.

4.7.9 The FITNESS Construct

The general 'fitness' construct is represented by questions 1.1, 1.7 and 1.13 and the specific 'fitness' construct by questions 2.1a, 2.1b and 2.1c.

General Construct

4.7.9.1 Significant* negative correlations were established between questions 1.1 (I) and 1.7(C) and 1.1 (I) and 1.13 (P) - Table 10.

4.7.9.2 A significant positive correlation was established between questions 1.7 (C) and 1.13 (P).

4.7.9.3 The valuation of fitness (question 3.1) correlated positively with question 1.1 (I) at a significant level.

4.7.9.4 The desire for control of fitness (4.1) correlated significantly with question 1.1 (I) and valuation (3.1) in a positive direction.

4.7.9.5 The INTERNAL question (1.1) is clearly a strong component and was reinforced both by the valuation and desire for control of the construct.

Specific Construct

4.7.9.6 A significant positive correlation was established between questions 2.1b(I) and 2.1c (P).

* r = .232 and above (N = 72) I = internal: C = chance: P = powerful others

4.7.9.7 A negative correlation (almost signficant) was established between questions 2.1a (C) and 2.1b (I).

4.7.9.8 A significant positive correlation was established between valuation of specific fitness (question 3.7) and question 2.1b (I).

Discussion

4.7.9.9 Result 4.7.9.1 above tends to reflect an externality tendency in which dependence upon chance (C) or powerful others (P) is strongly associated as responses to the construct.

4.7.9.10 When the construct is specific the positive correlation between I and P probably represents a selective use of powerful others in support of personal endeavour. The question will need to be re-worded to polarise the discrimination between the I and P alternatives.

4.7.9.11 Chance (C) is associated more closely with P in both constructs that with I (Table 21), giving support to the notion that they are sub categories of an external tendency.

4.7.9.12 There is a reasonable set of correlations between general and specific questions (items) within the I, P and C scales (Table 6). The chance items in particular were significant at .467. This supports the existence of a general belief regarding physical fitness which requires more precise questionning for greater accuracy of analysis.

4.7.10 The APPEARANCE Construct

The general 'appearance' construct is represented by questions 1.2, 1.8 and 1.14 and the specific 'appearence' construct by questions 2.2a, 2.2b, and 2.2c. Correlations are shown in Table 11.

General Construct

4.7.10.1 A positive correlation was established between questions 1.2 (c) and 1.14 (P).

4.7.10.2 A negative correlation was established between questions 1.2 (C) and 1.8 (I) and questions 1.8 (I) and 1.14 (P).

4.7.10.3 A significant* correlation was established between the valuation and desire for control of the'appearance'construct.

Specific Construct

4.7.10.4 A significant positive correlation was established between questions 2.2a (I) and 2.2b (P).

4.7.10.5 A significant positive correlation was established between valuation of the construct and question 2.2a (I).

* r = .232 and above (N=72)

Discussion

4.7.10.6 The association between I and P responses in result 4.7.10.4 above suggests a selective reference to powerful others as being complementary to internality. It also reflects a need for the items to be re-worded to sharpen the division between the scales and thus polarise the alternatives.

4.7.10.7 The correlations between general and specific items on each scale were all positive (Table 6). The level of association supports the existence of a general belief regarding APPEARANCE but is not sufficiently high to eliminate the need for specific contextual questions relating to the construct.

4.7.10.8 In considering the relationship of I, P and C scales (Table 21) the chance (C) scale again remained closer to P than to I in both general and specific categories. Though P was highly correlated with I in the specific question (see result 4.7.10.4 above) it seems to indicate that a chance ideology, where held, is consistent with a tendency towards powerful others also for those pupils. Together the scales would combine in an external philosophy for those pupils retaining a considerable level of dependence upon factors beyond their own personal control.

4.7.11 The ACCEPTANCE BY FRIENDS Construct

The general 'acceptance' construct is represented by questions 1.3, 1.9 and 1.15 and the specific 'acceptance' construct by questions 2.3a, 2.3b and 2.3c. Correlations are shown in Table 12.

General Construct

4.7.11.1 A significant* positive correlation was established between questions 1.3 (P) and 1.9 (C).

4.7.11.2 Negative correlations were established between questions 1.15 (I) and 1.3 (P); and questions 1.15 (I) and 1.9 (C).

4.7.11.3 A significant positive correlation was found between question 1.15 (I) and the desire for control (4.3).

4.7.11.4 A significant positive correlation was found between valuation (3.3) and desire for control (4.3) of the construct.

Specific Construct

4.7.11.5 A significant negative correlation was established between questions 2.3a (P) and 2.3b (I).

4.7.11.6 A significant positive correlation was found between question 2.3a (P) and valuation of the construct (3.9).

4.7.11.7 A significant negative correlation was established between question 2.3b (I) and valuation of the construct (3.9).

* r = .232 and above (N=72)

Discussion

4.7.11.8 Those who value the construct clearly wish to control it (see result 4.7.11.4 above). The relatively low response to question 1.15 (I), resulting in a mean score of 4.7 (Table 1) may represent frustration and pessimism in the perception of internality with this construct. It does not equally reflect any lowering of valuation or desire for control.

4.7.11.9 The relationship between the C and P scale is again closer than the C and I scale (Table 21) with regard to the general construct.

4.7.11.10 With the specific construct the P and C scales are negatively correlated (-.128), suggesting that the constructs were not perceived similarly by pupils. This suggestion is reinforced by the low correlations between the general and specific "acceptance" constructs (Table 6).

4.7.11.11 The closer relationship of the C and I responses in question 2.3 reflects a common desire in both options not to want the drink. It suggests that the question needs re-wording to polarise the alternatives whilst emphasising the dependency factor in the P and C items.

4.7.12 The AGREEING WITH FRIENDS Construct

The general 'agreeing' construct is represented by questions 1.4, 1.10 and 1.16 and the specific 'agreeing' construct by questions 2.4a, 2.4b and 2.4c. Correlations are shown in Table 13.

The General Construct

4.7.12.1 Negative correlations were found between question 1.4(I) and 1.10(P); and 1.4(I) with 1.16(C).

4.7.12.2 A significant* positive correlation was established between 1.10 (P) and valuation of the construct (3.4).

4.7.12.3 The desire for control (4.4) was significantly correlated with 1.10(P) in a positive direction but negatively associated (significantly) with 1.4(I).

4.7.12.4 Valuation (question 3.4) was highly correlated with desire for control (4.4).

The Specific Construct

4.7.12.5 A significant negative correlation was established between question 2.4c (I) and 2.4b (P).

4.7.12.6 Question 2.4c (I) was negatively associated (-.139) with 2.4a (C).

* r = .232 and above (N = 72)

Discussion

4.7.12.7 In both constructs the C item related more closely to P than I, further reinforcing the case that they both came from a tendency towards externality.

4.7.12.8 Those pupils who like to agree with friends (question 1.10) rate the construct highly (see result 4.7.12.2 above).

4.7.12.9 Those who value the construct of "agreeing with friends" very much wish to be able to control this factor (result 4.7.12.4 above).

4.7.12.10 Consistency is demonstrated by the fact that desire for control was negatively associated with the (I) item. This suggests that the pupils not bothered about disagreeing with friends have no desire to alter the situation.

4.7.12.11 The absence of any significant correlation between valuation and responses to the specific construct suggests that the pupils do not feel strongly about the context selected (joining in a game). An alternative situation might well provide more interesting results in future.

4.7.12.12 Only the CHANCE items show any significant correlation between the general and specific constructs. This may reflect the CHANCE tendency existing as a basic philosophy and support, rather than undermine, the recommendation in 4.7.12.11 above for a modification to the context used in this programme.

4.7.13 The SORTING OUT WORRIES Construct

The general 'worries' construct is represented by questions 1.5, 1.11 and 1.17 and the specific 'worries' construct by questions 2.5a, 2.5b and 2.5c. Correlations are shown in Table 14.

The General Construct

4.7.13.1 There were no significant* correlations between the I, P or C items.

4.7.13.2 The valuation item (3.5) correlated highest with question 1.11 (P) but not at a significant level.

4.7.13.3 Valuation was shown to correlate significantly with desire for control (4.5) in a positive direction.

4.7.13.4 A good negative correlation was found between desire for control and the C item (question 1.5).

The Specific Construct

4.7.13.5 A significant negative correlation was established between questions 2.5b (I) and 2.5a (P).

4.7.13.6 The valuation item (3.11) had similar correlations (all fairly neutral) with the I, C and P items.

* r = .232 and above (N=72)

Discussion

4.7.13.7 Result 4.7.13.5 would suggest that those scoring highly on the P scale value relatively highly the ability to sort out their worries.

4.7.13.8 Since a significant correlation exists between the P items on both constructs (Table 6) it seems surprising not to have a higher correlation between the valuation and P items on the specific construct. This may well reflect the discrimination of pupils between being internal and consulting others over prolbems of homework. It may also support earlier suggestions that P items need re-wording towards greater dependency upon other people.

4.7.13.9 Those rating the value of 'sorting out worries' quite clearly wish to be able to control this factor (result 4.7.13.3 above). Since no significant correlation exists with I, P or C items in the general construct it may reveal that some pupils wish to be able to sort out their worries irrespective of whether this is associated with an internal or external tendency.

4.7.13.10 All three scales correlated significantly between their corresponding items in the general and specific 'worries' context (Table 6). This would suggest that a consistent philosophy towards 'sorting out worries' is held by pupils, whatever personal strategy is adopted.

4.7.14 The CONTENTMENT Construct

The general 'contentment' construct is represented by questions 1.6, 1.12 and 1.18 and the specific 'contentment' construct by questions 2.6a, 2.6b and 2.6c. Correlations are shown in Table 15.

The General Construct

4.7.14.1 The I, P and C items all correlated slightly with each other in a positive direction.

4.7.14.2 Question 1.12 (P) had the highest mean score (Table 1) suggesting that it was held in the overall highest regard.

4.7.14.3 A significant* positive correlation was established between valuation (3.6) and desire for control (4.6).

4.7.14.4 The valuation of the construct was very high (mean 6.4 - Table 1).

The Specific Construct

4.7.14.5 A significant positive correlation was established between questions 2.6b (I) and 2.6c (P).

4.7.14.6 A negative correlation was found between questions 2.6a (C) and 2.6c (P).

* r = .232 and above (N=72)

4.7.14.7 The valuation of the construct (3.12) correlated with questions 2.6b (I) and 2.6c (P) similarly.

Discussion

4.7.14.8 In the general construct I and P have a low positive association whereas in the specific context it becomes significant. The latter situation may demonstrate that pupils see both factors as being important contributors to contentment. It may also reveal the need to polarise the options further in re-wording the specific questions.

4.7.14.9 The chance factor assumes its normal close position to powerful other factors in the general construct. However in the specific context it shows a negative correlation, perhaps indicating the recognition that chance is relatively less important than human behaviour in this respect.

4.7.14.10 This is reinforced by the association between valuation and desire for control (result 4.7.14.3 above) indicating that when considered important the construct's control is desired by pupils.

4.7.15 THE VALUATION AND DESIRE FOR CONTROL OF CONSTRUCTS

Valuation of constructs

This construct is represented by question 3.

4.7.15.1 The valuation of various constructs (general and specific) show that I (internal) items are associated positively in 8 out of 12 cases (Table 20). Of the 8 positive correlations 3 are at a level of significance ($P < .01$).

4.7.15.2 Positive correlations with P items were established in 10 out of 12 cases (2 significant $P < .01$).

4.7.15.3 Chance (C) items were positively correlated in only 7 out of 12 cases (all less than $r = .1$).

4.7.15.4 Group C (low academic ability) scored higher than group A in 8 out of the 12 constructs (Table 1). The exceptions related to the 'contentment' and 'worries' constructs.

The Desire for Control Construct

This construct is represented by question 4.

4.7.15.5 Group A (high ability) scored higher on all 6 constructs than groups B and C (Table 1). The mean scores were only slightly higher but consistently so. This may reflect a stronger desire but may not necessarily be accompanied by a more optimistic assessment of ability to control.

4.7.15.6 Males scored higher on the constructs "fitness", "appearance" and "agreeing with friends". Females scored higher on "acceptance", "worries" and "contentment".

4.7.15.7 Whereas females valued "appearence" highly (item 3.8 - Table 1) males had a stronger desire for its control (result 4.7.15.2 above). This may indicate gender differences in perceived capability to control as well as desire for control.

The relationship between the "Valuation" Scale and "Desire for Control" Scale

CONSTRUCT	Fitness	Appear-ance	Acceptance by friends	Agreeing with friends	Sorting out worries	Content - ment
CORRELA-TION	.452**	.567**	.575**	.736**	.252*	.289*

extract from Tables 10 - 15 inclusive

4.7.15.8 There is a clear and consistently high correlation between the valuation placed on the various constructs and an associated desire to control such constructs.

4.7.15.9 This does not reveal whether pupils see such controls as possible. The scales may not be discriminating between optimists, realists and pessimists in its present form though this may be both possible and desirable with the development programme.

4.7.16 VALIDITY: THE CONSTRUCT VALIDATION EXERCISE

4.7.16.1 Introduction

Question 7 requested pupils to give definitions of phrases describing the six basic constructs used in the research. In each case the phrase was preceded by the words "What do you understand by the term". The intention was to quantify the responses for each construct and compare them with definitions already drawn up by the author and colleagues (see Appendix III).

The purpose of this exercise was to confirm similarity of conceptualisation and thereby provide some evidence of construct validity in the research design.

4.7.16.2 Methodology

The factors identified for each construct by the author and colleagues were listed (see Table 22). Each pupil's responses were then analysed and recorded either against the pre-determined matrix or as new factors. In this way it was possible to calculate the proportion of original factors represented in pupil definitions as compared with those already identified by the author.

Clearly the analysis was subjective but was rigorously carried out with minimal bias.

4.7.16.3 Results

Table 22 shows the total responses for the various factors within each construct. The factors listed under the heading "Defined by colleagues" were those additional to factors already identified by the author.

The omission of responses by some pupils and detailed definitions by others meant that no consistent totals were recorded but varied from construct to construct.

Fitness

(i) A number of original factors were identified by pupils. Skill was mentioned within the "physical ability" category. Food and resultant body weight were shown by 12 pupils as being perceived within the fitness construct.

(ii) Just over half of all responses related to "author" definitions (38 out of 68). However the range of pupils' perception should not be overlooked in future research design and outcomes.

Appearance

(i) The vast majority of definitions had been identified by the author and colleagues (90 out of 104).

(ii) The majority of responses (72 out of 104) were recorded for three "author" factors - physical features, grooming and clothing.

(iii) Hygiene was a popular response (13) in this category.

(iv) Peer relationships were included by some pupils as conformity or non-conformity. It is a powerful motivational factor in appearance but may be questionable as a true definition of appearance (see DISCUSSION section which follows).

Acceptance By Friends

(i) The majority of definitions had been identified by the author in this construct (48 out of 70).

(ii) Definitions (22) originated by pupils came from a wide range (9) of factors.

(iii) Of these 22 definitions the most popular ("getting on well with others") could have been included with the "author" definition "being liked by friends" but since it may have incorporated a wider dimension it was recorded as shown in Table 22.

Agreeing With Friends

(i) The "author" definitions formed 53 of the 66 total responses in this category.

(ii) The factor "similar attitudes" comprised 39 of the 53 "author" responses and was by far the most popular perception of this construct.

(iii) An interesting result was that the factor "conformity" was included in their definition by 9 pupils, reflecting an

awareness of the peer influences existing and acting as a force with this construct.

Sorting Out Worries

(i) An overwhelming majority of responses (65 out of 66) in this category related to the three factors identified by the author.

(ii) The act of seeking help with problems was mentioned in many (29) definitions but was quantified separately from expressed feelings or personal behaviour in response to worries which didn't involve other people.

(iii) 16 pupils mentioned the process of finding a solution to worries but these were included within the other response groups.

Contentment

(i) 54 out of 72 responses related to factors identified within the author's definition.

(ii) One factor (feeling happy/enjoying life) accounted for 39 of the total responses (72).

(iii) The absence of unhappiness (an inverse phrasing of (ii above) was recorded in 12 pupils' definitions.

(iv) A factor (good friends) was recorded by 8 pupils, reflecting an awareness of a social dimension to this construct.

Discussion

4.7.16.4 The exercise appears to support the notion that a reasonable degree of consensus is held by author, colleagues and pupils with regard to the perception of the six basic constructs.

Out of a total of 446 factors identified by pupils within the constructs 348 of them had been incorporated in the designer's matrix. Of course the analysis of pupils' responses was subjective but is offered for scrutiny as an unbaised exercise in quantification and categorisation.

All pupils' responses were included in the analysis though the validity of some may be open to question. At this stage it was decided to accept completely the pupils' definitions as being an expression of their perception and thereby justified.

A very interesting outcome was the social dimension arising in definitions. The conformity factor in "appearance" and again in "agreeing with friends" demonstrates this effect as does the "good friends" factor in the contentment construct. Not only does this indicate the breadth of perception but also a mature attitude towards their world by pupils.

The exercise, limited as it was, offers some evidence of construct validity being present in the research programme. It should only be seen as one small step in pursuit of appropriate standards of practice.

4.7.17 RELIABILITY

Alpha reliabilities, demonstrating internal consistency within the three Locus of Control scales, were shown and discussed under the appropriate headings earlier. The respective findings for internality (.39) powerful others (.47) and chance (.75) were quite satisfying for an initial research programme. Clearly improved correlations will be expected in the next phase of the project.

Table 23 shows individual item analysis related to the scales within which they are situated. Strong and weak items may thus be identified and, where necessary, modified to develop further each scale's reliability. For instance question 1.6 (internality), question 2.3a (powerful others) and question 2.2c (chance) all require re-assessment since they correlate least well with their scale in general.

These findings together with the high proportion of positive correlations found between items representing the same scale (see sections 1 - 3 inclusive), provide evidence of reasonable reliability levels in the newly developed scales. It is hoped that the amendments to the concept and wording of particular questions, carried out in the light of the prototype exercise, will enhance even further the reliability of the scales to an acceptable level. In this way the programme will develop its utlimate goal of becoming an independent measuring instrument, appropriately researched, for widespread use in secondary education.

4.7.18 The RESPONSE System

The NOT SURE Column

4.7.18.1 Those pupils (34) having access to such a column made 224 (10%) responses out of a possible 2244.

4.7.18.2 Of these 224 responses, 72 (32%) were made by males and 152 (68%) by females.

N.B. The composition of the 34 pupils was 14 males (41%) and 20 females (59%).

4.7.18.3 If females had responded NOT SURE at the same rate as males they would have made only 102 responses rather than 152.

4.7.18.4 The use of this column, based upon those with access to it, from the three academic groups was as follows:-

Group A - 73 (32%) responses

Group B - 64 (28%) responses

Group C - 87 (39%) responses

N.B. The number of pupils having access to this column from each group was as follows:

Group A - 13 (38%)

Group B - 13 (38%)

Group C - 8 (24%)

Leaving All Boxes Blank

Those pupils (38) without access to a NOT SURE column were able to express such a response by leaving all boxes blank in the row relating to each question.

4.7.18.5 Only 18 (< 1%) rows in total were left blank by the 38 pupils out of a possible 2508.

4.7.18.6 If these pupils had responded to this option at the same rate (10%) as those with access to such a column (see 4.7.18.1 above) then 250 rows would have been left blank in total.

The SLIGHTLY AGREE or SLIGHTLY DISAGREE Columns

4.7.18.7 A combined total of 1595 responses were made in these columns by all 72 pupils (out of a maximum of 4752) i.e. all responses totalled for BOTH columns.

4.7.18.8 The 1595 responses were made by the groups with and without access to a NOT SURE column as follows:

with access 687 out of a possible 2244

without access 908 out of a possible 2508

4.7.18.9 If the latter group (without access) had responded to these columns at the same rate as the former group (with access) then 768 (as opposed to 908) responses would have been recorded.

Discussion

4.7.18.10 The fact that 224 (10%) NOT SURE responses were made by those pupils (34) completing questionnaires with this option tends to suggest that its retention is justified. Its omission may otherwise force pupils into a false response rather than leave a blank row as requested, thereby invalidating the programme to some extent.

4.7.18.11 An interesting fact is that 68% of the NOT SURE responses were made by females as opposed to 32% by males (N.B. the ratio of pupils with such an option was females 59% and males 41%). Whether this indicates greater uncertainty by females or undue rashness by males cannot be judged accurately at this stage but would be worthy of further consideration in future programme development.

4.7.18.12 Group C were clearly over-represented in the NOT SURE responses. Though making up only 24% of pupils with such an option group C accounted for 39% of the total NOT SURE responses (4.7.18.4 above). Group A, on the other hand, contained 38% of pupils with such an option but provided only 32% of the total NOT SURE responses.

This would suggest that a greater degree of self confidence in stating personal views is held by the higher ability pupils, possibly associated with their success and subsequent self esteem in the academic world. However the findings are only tentative and require confirmation through further investigation.

4.7.18.13 The NOT SURE column should be made the same size as other columns in the response system. In the prototype exercise the original questionnaire was modified to incorporate the NOT SURE column rather than being re-typed in full. Column size may indicate importance to some pupils and facilitate biased responses on their part.

4.7.18.14 The SLIGHTLY AGREE and SLIGHTLY DISAGREE columns should remain in conjunction with the NOT SURE column. The omission of the latter option appeared to coerce pupils into responding inappropriately, usually in one of the SLIGHTLY columns (4.7.18.5 and 4.7.18.6 above).

4.7.18.15 At the same time the SLIGHTLY options were sufficiently used in general by all pupils to justify their retention in the pursuit of maximum discrimination between positive and negative responses (4.7.18.7 - 4.7.18.9 above).

4.7.19 SUMMARY OF FINDINGS AND RECOMMENDATIONS

The results of this prototype exercise provide guidance for the development of the research programme. Evidence of the existence of scales has been produced to permit the next phase to be approached with both confidence and academic justification. The main points to have arisen from this exercise may be summarised as follows:

1. The prototype questionnaire, suitably modified as described in this chapter, should be formally piloted.

2. Groups of pupils from different schools should be involved in the piloting phase.

3. A standardised measuring instrument should be used with all pupils.

4. The instrument should contain a "NOT SURE" column.

5. Health Locus of Control measures need to be both general and situation-specific in context.

6. Academic rating may be an important variable in Health Locus of Control.

7. Gender may be an important variable in Health Locus of Control.

8. The personal valuation of a construct must be taken into account in this area of research.

9. Desire for control of a construct may be of less importance than perceived ability to be able to acquire such personal control.

10. Risk taking, susceptibility to ill health and the concept of newness require further investigation with regard to scale development.

11. Conceptualisation of health should be retained in the research programme due to the various models of health held by pupils.

12. A distinctive perception of health with a strong social dimension appears to be related to low academic ability.

4.8

APPENDIX I

GOOD HEALTH SURVEY

Name of School .....

Tutor Group .....

Boy or Girl .....

Date of Birth .....

This is NOT a test. It is an attempt to find out what your opinions and beliefs are about health, There are no right or wrong answers to the questions being asked.

Please answer the questions according to your true feelings.

THANK YOU FOR YOUR HELP

The questions which follow ask you to say whether you agree or disagree with something. There are 3 ways of agreeing or disagreeing.

1. STRONGLY means "very much" or "a great deal".
2. AGREE or DISAGREE means somewhere between STRONGLY and SLIGHTLY
3. SLIGHTLY means "only a bit" or "just a little"

TRY THIS EXAMPLE QUESTION

PLACE A TICK IN ONE OF THE BOXES	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
I am always glad to return to school after the holidays							

PLEASE DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO.

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ON THE SAME LINE	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
1 I can do much for myself to become, and stay, physically fit.							
2 Whether I look good to others is mainly a question of the body I was born with.							
3 Whether or not my friends accept me is decided by them rather than me.							
4 It doesn't bother me if my friends disagree with me.							
5 The best way to sort out worries is to cross your fingers and hope for the best.							
6 If I'm happy it's usually because of my own efforts.							
7 Being physically fit is a matter of luck							
8 I can do much to make myself look good to others.							
9 Being accepted by friends is decided more by chance than anything else.							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ON THE SAME LINE	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
10 I like to agree with my friends.							
11 I prefer to ask for help if I am worried about something.							
12 Whether I am happy or not mainly depends upon how people treat me.							
13 I would need someone to help me if I am going to get fitter than I am now.							
14 Whether or not I look good to others depends upon how they judge me.							
15 I can do much to get my friends to accept me.							
16 Whether I agree with my friends depends upon the mood we are in.							
17 If I am worried about something I would rather sort it out on my own.							
18 If I am happy I put it down to being my lucky day.							

2

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ON THE SAME LINE	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
1 IF YOU HAD A TEST OF FITNESS COMING AT SCHOOL FOR A TUTOR GROUP COMPETITION would you: a) just hope that things go well on the day?							
b) get yourself fitter for the competition?							
c) ask someone to help you prepare for the test?							
2 IF YOU WERE GOING ON A DATE would you: a) make a special effort with your appearance?							
b) ask someone for advice about your appearance?							
c) be your usual self and hope for the best?							
3 IF SOME FRIENDS WERE TRYING TO GET YOU TO DRINK SOMETHING ALCOHOLIC AGAINST YOUR WISHES would you: a) drink it to help be accepted by them?							
b) refuse even if it meant you may no longer be accepted by your friends?							
c) hope that you could think of a good excuse for not drinking it?							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ON THE SAME LINE	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
4 IF SOME FRIENDS WANTED YOU TO JOIN THEM IN A GAME THAT YOU DIDN'T LIKE would you:							
a) hope that the game finished for some reason?							
b) join in the game?							
c) not join in the game?							
5 IF YOU WERE WORRIED ABOUT A PROBLEM WITH YOUR HOMEWORK would you:							
a) ask someone for help?							
b) carry on working at it on your own?							
c) stop working or worrying and hope that something comes into your mind?							
6 IF SOMETHING HAPPENED AT SCHOOL WHICH REALLY PLEASED YOU would you:							
a) put it down to good luck?							
b) put it down to your own efforts?							
c) put it down to the help you had been given by other people?							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ON THE SAME LINE 3	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
THESE THINGS ARE VERY IMPORTANT TO ME 1 Being physically fit							
2 Looking good to others							
3 Being accepted by my friends							
4 Agreeing with my friends							
5 Sorting out any worries I have							
6 Being happy							
7 A test of fitness in a tutor group competition							
8 Looking good on a date							
9 Drinking alcohol if my friends want me to							
10. Joining in games with my friends							
11 Overcoming problems with my homework							
12 Good things happening at school							

4

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ON THE SAME LINE	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
I WOULD LIKE TO BE ABLE TO CONTROL							
1 My level of physical fitness.							
2 Whether I look good to others.							
3 Whether I am accepted by my friends.							
4 Whether I agree with my friends.							
5 How I sort out any worries I have.							
6 Whether I am happy.							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ON THE SAME LINE 5	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
1 New experiences are exciting.							
2 I'm not worried about things which may cause me harm in many years time.							
3 There is nothing wrong with taking care of my health.							
4 Good health doesn't come easy but has to be worked at all the time.							
5 People who never take risks are boring.							
6 I will be healthier now and in future if I take care of my body.							
7 You don't have to try everything in order to decide what you think of it.							
8 Good health is very important to me.							
9 Just because something makes you feel good it doesn't mean that it is doing you good.							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ON THE SAME LINE	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
10 If I take chances with my health I make it more likely that I will become ill.							
11 All new experiences help me learn more about myself.							
12 People who take risks with their body will be sorry sooner or later.							

6. What does HEALTH mean to you?
(You may tick more than one box if you wish)

being fit	☐	recovering from illness	☐
being strong	☐	not having worries	☐
not being ill	☐	having good friends	☐
enjoying life	☐	looking forward to each day	☐
obeying rules	☐	knowing yourself	☐
hygiene	☐	being admired	☐
not having disease	☐	habits	☐
being happy	☐	personal discipline	☐
being good at things	☐	having a good time	☐
being liked by people	☐	doing what you are told	☐
people making you well	☐	feeling good	☐

other (please state)

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7. a) What do you understand by the term PHYSICAL FITNESS?

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b) What do you understand by the term LOOKING GOOD TO OTHERS?

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c) What do you understand by the term BEING ACCEPTED BY FRIENDS?

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d) What do you understand by the term to AGREE WITH FRIENDS?

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e) What do you understand by the term SORTING OUT WORRIES?

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f) What do you understand by the term BEING HAPPY?

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APPENDIX II

GOOD HEALTH SURVEY

Name of School .....

Tutor Group .....

Boy or Girl .....

Date of Birth .....

This is NOT a test. It is an attempt to find out what your opinions and beliefs are about health. There are no right or wrong answers to the questions being asked.

Please answer the questions according to your true feelings.

THANK YOU FOR YOUR HELP

The questions which follow ask you to say whether you agree or disagree with something. There are 3 ways of agreeing or disagreeing.

1. STRONGLY means "very much" or "a great deal".
2. AGREE or DISAGREE means somewhere between STRONGLY and SLIGHTLY
3. SLIGHTLY means "only a bit" or "just a little"

TRY THIS EXAMPLE QUESTION

PLACE A TICK IN ONE OF THE BOXES	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
I am always glad to return to school after the holidays						

PLEASE DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO.

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ON THE SAME LINE 1	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
1 I can do much for myself to become, and stay, physically fit.						
2 Whether I look good to others is mainly a question of the body I was born with.						
3 Whether or not my friends accept me is decided by them rather than me.						
4 It doesn't bother me if my friends disagree with me.						
5 The best way to sort out worries is to cross your fingers and hope for the best.						
6 If I'm happy it's usually because of my own efforts.						
7 Being physically fit is a matter of luck						
8 I can do much to make myself look good to others.						
9 Being accepted by friends is decided more by chance than anything else.						

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ON THE SAME LINE	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
10 I like to agree with my friends.						
11 I prefer to ask for help if I am worried about something.						
12 Whether I am happy or not mainly depends upon how people treat me.						
13 I would need someone to help me if I am going to get fitter than I am now.						
14 Whether or not I look good to others depends upon how they judge me.						
15 I can do much to get my friends to accept me.						
16 Whether I agree with my friends depends upon the mood we are in.						
17 If I am worried about something I would rather sort it out on my own.						
18 If I am happy I put it down to being my lucky day.						

2 PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ON THE SAME LINE	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
1 IF YOU HAD A TEST OF FITNESS COMING AT SCHOOL FOR A TUTOR GROUP COMPETITION would you: a) just hope that things go well on the day?						
b) get yourself fitter for the competition?						
c) ask someone to help you prepare for the test?						
2 IF YOU WERE GOING ON A DATE would you: a) make a special effort with your appearance?						
b) ask someone for advice about your appearance?						
c) be your usual self and hope for the best?						
3 IF SOME FRIENDS WERE TRYING TO GET YOU TO DRINK SOMETHING ALCOHOLIC AGAINST YOUR WISHES would you: a) drink it to help be accepted by them?						
b) refuse even if it meant you may no longer be accepted by your friends?						
c) hope that you could think of a good excuse for not drinking it?						

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ON THE SAME LINE	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
4 IF SOME FRIENDS WANTED YOU TO JOIN THEM IN A GAME THAT YOU DIDN'T LIKE would you:						
a) hope that the game finished for some reason?						
b) join in the game?						
c) not join in the game?						
5 IF YOU WERE WORRIED ABOUT A PROBLEM WITH YOUR HOMEWORK would you:						
a) ask someone for help?						
b) carry on working at it on your own?						
c) stop working or worrying and hope that something comes into your mind?						
6 IF SOMETHING HAPPENED AT SCHOOL WHICH REALLY PLEASEDYOU would you:						
a) put it down to good luck?						
b) put it down to your own efforts?						
c) put it down to the help you had been given by other people?						

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ON THE SAME LINE 3	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
THESE THINGS ARE VERY IMPORTANT TO ME 1 Being physically fit						
2 Looking good to others						
3 Being accepted by my friends						
4 Agreeing with my friends						
5 Sorting out any worries I have						
6 Being happy						
7 A test of fitness in a tutor group competition						
8 Looking good on a date						
9 Drinking alcohol if my friends want me to						
10. Joining in games with my friends						
11 Overcoming problems with my homework						
12 Good things happening at school						

4

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ON THE SAME LINE	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
I WOULD LIKE TO BE ABLE TO CONTROL						
1 My level of physical fitness.						
2 Whether I look good to others.						
3 Whether I am accepted by my friends.						
4 Whether I agree with my friends.						
5 How I sort out any worries I have.						
6 Whether I am happy.						

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ON THE SAME LINE 5	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
1 New experiences are exciting.						
2 I'm not worried about things which may cause me harm in many years time.						
3 There is nothing wrong with taking care of my health.						
4 Good health doesn't come easy but has to be worked at all the time.						
5 People who never take risks are boring.						
6 I will be healthier now and in future if I take care of my body.						
7 You don't have to try everything in order to decide what you think of it.						
8 Good health is very important to me.						
9 Just because something makes you feel good it doesn't mean that it is doing you good.						

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ON THE SAME LINE	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
10 If I take chances with my health I make it more likely that I will become ill.						
11 All new experiences help me learn more about myself.						
12 People who take risks with their body will be sorry sooner or later.						

6. What does HEALTH mean to you?
(You may tick more than one box if you wish)

being fit	☐	recovering from illness	☐
being strong	☐	not having worries	☐
not being ill	☐	having good friends	☐
enjoying life	☐	looking forward to each day	☐
obeying rules	☐	knowing yourself	☐
hygiene	☐	being admired	☐
not having disease	☐	habits	☐
being happy	☐	personal discipline	☐
being good at things	☐	having a good time	☐
being liked by people	☐	doing what you are told	☐
people making you well	☐	feeling good	☐

other (please state)

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7. a) What do you understand by the term PHYSICAL FITNESS?

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b) What do you understand by the term LOOKING GOOD TO OTHERS?

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c) What do you understand by the term BEING ACCEPTED BY FRIENDS?

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d) What do you understand by the term to AGREE WITH FRIENDS?

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e) What do you understand by the term SORTING OUT WORRIES?

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f) What do you understand by the term BEING HAPPY?

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APPENDIX III

ASPECTS OF HEALTH: AN ENQUIRY INTO CONCEPTUALISATIONS

Below is a series of health-related concepts which are often implicated in health education programmes for adolescents. Would you please make any comments you consider necessary regarding the definitions in general, specific aspects (including wording) or any significant omissions.

N.B. the definitions will not be presented to adolescents in the forms shown which are for this enquiry only.

1 Physical appearance

The physical features of a person. In addition to body parts such as face, arms and legs it includes aspects of grooming incorporating hair style, make-up, clothing and jewellery. Posture, gesture, gait and other body movements are also included.

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2 Physical fitness

This is a personal characteristic which is relative to the demands of varying situations (e.g. fitness for a job may not provide fitness for a particular sport.) Fitness also involves cardiovascular endurance (requiring an adequate supply of oxygen) and muscular endurance (the ability of muscle groups to repeat a given movement. Strength (the capacity to exert force against resistance and flexibility (the range of movement at joints) are also involved. Recovery from exertion may also be a criterion of fitness.

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3 Popularity with peers

The extent to which an individual is accepted by his (her) peers. It may be seen by the subject as a general disposition (or characteristic) or relate more specifically to particular situations/occasions.

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4 Conformity with peers

The extent to which an individual thinks or acts similarly to his (her) peers. It is implied that the subject consciously decides to think or act in such a way that is in harmony with peers rather than the agreement being coincidental. The consensus may be initiated by the individual or in response to the influence of others.

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5 Reaction to anxiety

The individual's stated feeling or behaviour in response to situations (or events) which cause him (her) psychological distress. The focus is not on the situations which cause the anxiety but upon the personal reactions to them.

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6 Contentment

The extent to which an individual feels happy or satisfied with life. It may include the frequency of pleasant feelings and the cause of such experiences. The main emphasis is upon positive feelings of satisfaction rather than negative aspects of unhappiness.

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APPENDIX IV

COMPUTER PROGRAMME

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JOB (BEDGTM, RUN)
DELETE (HEALTH)
SPSS (SAVEFILE = HEALTH)
- - - - - - - - - -
RUN NAME        LOCUS OF CONTROL
FILE NAME       HEALTH
VARIABLE LIST   SEX, GROUP, TEST, Q1 TO Q66
INPUT MEDIUM    CARD
INPUT FORMAT    FIXED (69(F1.0))
N OF CASES      72
VALUE LABELS    SEX (1) MALE (2) FEMALE/ GROUP (1) HIGH ACADEMIC (2)
                MEDIUM ACADEMIC (3) LOW ACADEMIC/TEST (1) A (2) B
COMPUTE         INTERNAL = Q1, Q4, Q6, Q8, Q15, Q17, Q20, Q22, Q26,
                           Q30, Q32, Q35
COMPUTE         POWERFUL OTHERS = Q3, Q10, Q11, Q12, Q13, Q14, Q21,
                                  Q23, Q25, Q29, Q31, Q36.
COMPUTE         CHANCE = Q2, Q5, Q7, Q9, Q16, Q18, Q19, Q24,+ Q27,
                         Q28, Q33, Q34.
COMPUTE         FITNESS = Q1, Q7, Q13, Q37, Q49.
COMPUTE         SPECIFIC FITNESS = Q19, Q20, Q21, Q43
COMPUTE         APPEARANCE = Q2, Q8, Q14, Q38, Q50
COMPUTE         SPECIFIC APPEARANCE = Q22, Q23, Q24, Q49
COMPUTE         ACCEPTANCE BY PEERS = Q3, Q9, Q15, Q39, Q51
COMPUTE         SPECIFIC ACCEPTANCE = Q25, Q26, Q27, Q45
COMPUTE         AGREEING WITH FRIENDS = Q4, Q10, Q16, Q40, Q52
COMPUTE         SPECIFIC AGREEMENT = Q28, Q29, Q30, Q46
COMPUTE         SORTING OUT WORRIES = Q5, Q11, Q17, Q41, Q53
COMPUTE         SPECIFIC WORRIES = Q31, Q32, Q33, Q47
COMPUTE         CONTENTMENT = Q6, Q12, Q18, Q42, Q54
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COMPUTE          SPECIFIC CONTENTMENT = Q34, Q35, Q36, Q48

COMPUTE          RISK TAKING = Q55, Q59

COMPUTE          SUSCEPTIBILITY TO ILLNESS = Q55, Q60, Q64, Q66

COMPUTE          GOOD HEALTH = Q57, Q58, Q62, Q63

COMPUTE          NEWNESS = Q55, Q61, Q65

CONDESCRIPTIVE   Q1 TO Q66

STATISTICS       ALL

READ INPUT DATA

r head

RELIABILITY VARIABLES = Q1, Q4, Q6, Q8, Q15, Q17, Q20, Q22, Q26,
                        Q30, Q32, Q35

            SCALE (TEST) = Q1, Q4, Q6, Q8, Q15, Q17, Q20, Q22,
                           Q26, Q30, Q32, Q35

            STATISTICS   ALL

                         Repeated for each category shown above.

SAVE FILE   HEALTH

FINISH

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SAVE (HEALTH)

LTD

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TABLE 1

COMPARISON OF MEANS FOR INDIVIDUAL QUESTIONS

	QUESTION		GROUP A N = 28	GROUP B N = 26	GROUP C N = 18	MALE N = 32	FEMALE N = 40	TOTAL N = 72
1.1	Fitness	INTERNAL (I)	6.4	6.1	5.6	6.2	6.0	6.1
1.2	Appearance	CHANCE (C)	4.2	4.3	4.6	4.6	4.1	4.1
1.3	Acceptance by friends	POWERFUL OTHERS (P)	4.3	5.3	5.3	5.1	4.9	5.0
1.4	Agreeing with friends	I	6.0	5.5	5.0	5.3	4.8	5.0
1.5	Sorting out worries	C	3.2	2.2	2.2	2.2	2.1	2.2
1.6	Contentment	I	5.1	4.6	4.8	5.1	4.6	4.8
1.7	Fitness	C	1.6	2.0	2.8	2.0	2.1	2.1
1.8	Appearance	I	5.6	5.1	4.6	5.2	5.1	5.2
1.9	Acceptance by friends	C	2.3	2.3	3.6	2.5	2.6	2.6
1.10	Agreeing with friends	P	4.9	5.2	4.9	5.3	4.9	5.1
1.11	Sorting out worries	P	4.9	5.3	5.1	5.1	5.1	5.1

TABLE 1

COMPARISON OF MEANS FOR INDIVIDUAL QUESTIONS

QUESTION		GROUP A N = 28	GROUP B N = 26	GROUP C N = 18	MALE N = 32	FEMALE N = 40	TOTAL N = 72
1.12 Contentment	P	5.2	5.0	5.0	5.0	5.1	5.1
1.13 Fitness	P	3.3	3.9	3.9	3.3	3.9	3.7
1.14 Appearance	P	4.8	4.6	5.0	4.9	4.7	4.8
1.15 Acceptance by friends	I	4.6	4.8	4.5	4.8	4.6	4.7
1.16 Agreeing with friends	C	5.2	4.8	5.1	5.0	5.0	5.0
1.17 Sorting out worries	I	3.6	4.7	4.4	4.2	4.2	4.2
1.18 Contentment	C	2.9	3.3	4.3	3.2	3.6	3.4
2.1a Specific fitness	C	3.7	3.8	4.7	4.1	3.8	3.9
2.1b Specific fitness	I	5.6	5.1	5.4	5.7	5.2	5.4
2.1c Specific fitness	P	4.2	4.1	4.6	4.2	4.3	4.3
2.2a Specific appearance	I	6.3	5.9	6.1	5.9	6.2	6.1

TABLE 1

COMPARISON OF MEANS FOR INDIVIDUAL QUESTIONS

QUESTION		GROUP A N = 28	GROUP B N = 26	GROUP C N = 18	MALE N = 32	FEMALE N = 40	TOTAL N = 72
2.2b Specific appearance	P	4.6	4.0	4.2	3.9	4.6	4.3
2.2c Specific appearance	C	4.5	4.5	4.5	4.8	4.3	4.5
2.3a Specific acceptance by friends	P	2.4	2.8	2.8	2.9	2.5	2.6
2.3b Specific acceptance by friends	I	4.7	4.6	4.3	4.5	4.7	4.6
2.3c Specific acceptance by friends	C	4.8	4.2	3.6	4.3	4.3	4.3
2.4a Specific agreeing with friends	C	4.2	4.7	4.7	4.6	4.4	4.5
2.4b Specific agreeing with friends	P	3.6	3.4	3.4	3.2	3.8	3.5
2.4c Specific agreeing with friends	I	4.5	5.0	4.3	5.0	4.4	4.6
2.5a Specific worries	P	6.1	5.6	5.2	5.6	5.8	5.7
2.5b Specific worries	I	3.7	4.5	4.2	4.0	4.3	4.2
2.5c Specific worries	C	2.9	3.6	4.3	3.8	3.3	3.6

TABLE 1

COMPARISON OF MEANS FOR INDIVIDUAL QUESTIONS

	QUESTION	GROUP A N = 28	GROUP B N = 26	GROUP C N = 18	MALE N = 32	FEMALE N = 40	TOTAL N = 72
2.6a	Specific contentment C	2.7	3.5	3.9	3.4	3.4	3.4
2.6b	Specific contentment I	4.9	5.4	5.1	5.0	5.3	5.2
2.6c	Specific contentment P	5.3	5.1	4.6	5.0	5.0	5.0
3.1	Valuation of fitness	5.7	5.8	6.0	5.7	5.8	5.8
3.2	Valuation of appearance	5.6	5.4	6.0	5.4	5.9	5.7
3.3	Valuation of acceptance by friends	5.9	5.7	6.1	6.0	5.9	5.9
3.4	Valuation of agreeing with friends	4.4	5.0	4.7	5.0	4.6	4.8
3.5	Valuation of sorting out worries	5.7	5.5	5.7	5.7	5.7	5.7
3.6	Valuation of contentment	6.4	6.0	6.2	6.2	6.3	6.3
3.7	Valuation of specific fitness	3.9	3.9	4.9	4.3	4.3	4.3
3.8	Valuation of specific appearance	5.7	5.8	6.4	5.8	6.0	5.9

TABLE 1

COMPARISON OF MEANS FOR INDIVIDUAL QUESTIONS

QUESTION	GROUP A N = 28	GROUP B N = 26	GROUP C N = 18	MALE N = 32	FEMALE N = 40	TOTAL N = 72
3.9 Valuation of specific acceptance	2.1	2.6	3.0	2.4	2.6	2.5
3.10 Valuation of specific agreement	5.1	4.9	5.5	5.5	5.0	5.2
3.11 Valuation of specific worries	6.2	5.6	6.2	6.2	5.9	6.0
3.12 Valuation of specific contentment	6.0	5.4	5.9	5.8	5.8	5.8
4.1 Control of fitness	5.9	5.7	5.8	6.0	5.8	5.8
4.2 Control of appearance	6.1	5.5	5.9	5.9	5.8	5.8
4.3 Control of acceptance by friends	6.0	5.2	5.9	5.6	5.7	5.7
4.4 Control of agreeing with friends	5.2	4.9	5.1	5.1	5.0	5.0
4.5 Control of worries	6.1	6.0	5.2	5.8	5.9	5.9
4.6 Control of contentment	6.2	5.8	5.8	5.8	6.1	6.0
5.1 Risk taking/newness	6.1	6.0	6.0	6.1	6.0	6.0

TABLE 1

COMPARISON OF MEANS FOR INDIVIDUAL QUESTIONS

QUESTION	GROUP A N = 28	GROUP B N = 26	GROUP C N = 18	MALE N = 32	FEMALE N = 40	TOTAL N = 72
5.2 Susceptibility to ill health	5.7	5.5	4.4	4.8	5.6	5.3
5.3 Good health	6.5	6.1	6.4	6.4	6.2	6.3
5.4 Good health	5.8	5.9	6.1	6.3	5.7	6.0
5.5 Risk taking	3.0	3.9	4.0	3.8	3.6	3.7
5.6 Susceptibility to ill health	5.9	5.8	6.1	5.9	6.1	6.0
5.7 Newness	3.5	2.9	2.8	3.0	3.2	3.1
5.8 Good health	6.0	5.8	6.2	6.1	6.0	6.0
5.9 Good health	5.9	6.0	6.0	6.0	5.9	5.9
5.10 Susceptibility to ill health	5.8	5.0	5.4	5.6	5.3	5.4
5.11 Newness	6.4	4.8	5.8	5.7	5.1	5.5
5.12 Susceptibility to ill health	6.0	5.0	5.7	5.4	5.6	5.5

TABLE 2

COMPARISON OF SCALE MEANS BY GROUPS AND GENDER

VARIABLE	GROUP A N = 28 M T F	GROUP B N = 26 M T F	GROUP C N = 18 M T F	TOTAL MALE N = 32	TOTAL FEMALE N = 40	TOTAL ALL N = 72
Internality (maximum 84 minimum 12)	59.2 59.9 59.6	62.6 60.6 61.6	61.4 56.1 58.4	61.1	59.2	60.1
Chance (maximum 84 minimum 12)	42.4 40.5 41.2	47.5 39.0 43.2	42.7 52.3 48.1	44.6	42.9	44.0
Powerful Others (maximum 84 minimum 12)	53.5 53.7 53.6	54.8 53.9 54.4	51.6 55.8 53.9	53.6	54.3	54.2
Risk Taking (maximum 14 minimum 2)	8.9 9.2 9.1	9.9 9.9 9.9	10.4 9.7 10.0	9.7	9.5	9.6
Susceptibility to illness (maximum 28 minimum 4)	23.6 23.1 23.3	20.1 22.4 21.3	21.9 21.3 21.6	21.8	22.4	22.2
Good Health (maximum 28 minimum 4)	24.8 23.8 24.2	24.3 23.5 23.9	25.5 24.1 24.7	24.8	23.7	24.3
Newness (maximum 21 minimum 3)	15.6 15.5 15.5	14.0 13.5 13.8	15.0 14.2 14.6	14.8	14.5	14.7

TABLE 3

THE INTERNAL SCALE (MEANS) BY GROUP AND GENDER

	QUESTION	GROUP A N = 28	GROUP B N = 26	GROUP C N = 18	MALE N = 32	FEMALE N = 40	TOTAL N = 72
1.1	Fitness	6.4	6.1	5.6	6.2	6.0	6.1
1.4	Agreeing with friends	6.0	5.5	5.0	5.3	4.8	5.0
1.6	Contentment	5.1	4.6	4.8	5.1	4.6	4.8
1.8	Appearance	5.6	5.1	4.6	5.2	5.1	5.2
1.15	Acceptance by friends	4.6	4.8	4.5	4.8	4.6	4.7
1.17	Sorting out worries	3.6	4.7	4.4	4.2	4.2	4.2
2.1b	Specific fitness	5.6	5.1	5.4	5.7	5.2	5.4
2.2a	Specific appearance	6.3	5.9	6.1	5.9	6.2	6.1
2.3b	Specific acceptance by friends	4.7	4.6	4.3	4.5	4.7	4.6
2.4c	Specific agreeing with friends	4.5	5.0	4.3	5.0	4.4	4.6
2.5b	Specific worries	3.7	4.5	4.2	4.0	4.3	4.2
2.6b	Specific contentment	4.9	5.4	5.1	5.0	5.3	5.2
							60.1

TABLE 4

CHANCE (MEANS) BY GROUP AND GENDER

QUESTION	GROUP A N = 28	GROUP B N = 26	GROUP C N = 18	MALE N = 32	FEMALE N = 40	TOTAL N = 72
1.2 Appearance	4.2	4.3	4.6	4.6	4.1	4.3
1.5 Sorting out worries	3.2	2.2	2.2	2.2	2.1	2.2
1.7 Fitness	1.6	2.0	2.8	2.0	2.1	2.1
1.9 Acceptance by friends	2.3	2.3	3.6	2.5	2.6	2.6
1.16 Agreeing with friends	5.2	4.8	5.1	5.0	5.0	5.0
1.18 Contentment	2.9	3.3	4.3	3.2	3.6	3.4
2.1a Specific fitness	3.7	3.8	4.7	4.1	3.8	3.9
2.2c Specific appearance	4.5	4.5	4.5	4.8	4.3	4.5
2.3c Specific acceptance by friends	4.8	4.2	3.6	4.3	4.3	4.3
2.4a Specific agreeing with friends	4.2	4.7	4.7	4.6	4.4	4.5
2.5c Specific worries	2.9	3.6	4.3	3.8	3.3	3.6
2.6a Specific contentment	2.7	3.5	3.9	3.4	3.4	3.4
						44.0

TABLE 5

POWERFUL OTHERS (MEANS) BY GROUP AND GENDER

QUESTION	GROUP A N = 28	GROUP B N = 26	GROUP C N = 18	MALE N = 32	FEMALE N = 40	TOTAL N = 72
1.3 Acceptance by friends	4.3	5.3	5.3	5.1	4.9	5.0
1.10 Agreeing with friends	4.9	5.2	4.9	5.3	4.9	5.1
1.11 Sorting out worries	4.9	5.3	5.1	5.1	5.1	5.1
1.12 Contentment	5.2	5.0	5.0	5.0	5.1	5.1
1.13 Fitness	3.3	3.9	3.9	3.3	3.9	3.7
1.14 Appearance	4.8	4.6	5.0	4.9	4.7	4.8
2.1c Specific fitness	4.2	4.1	4.6	4.2	4.3	4.3
2.2b Specific appearance	4.6	4.0	4.2	3.9	4.6	4.3
2.3a Specific acceptance by friends	2.4	2.8	2.8	2.9	2.5	2.6
2.4b Specific agreeing with friends	3.6	3.4	3.4	3.2	3.8	3.5
2.5a Specific worries	6.1	5.6	5.2	5.6	5.8	5.7
2.6c Specific contentment	5.3	5.1	4.6	5.0	5.0	5.0
						54.2

TABLE 6

CORRELATION OF GENERAL TO SPECIFIC CONSTRUCTS

CONSTRUCT	SCALES		
	INTERNAL	CHANCE	POWERFUL OTHERS
Fitness	.164	.467**	.124
Appearance	.263*	.108	.017
Acceptance by friends	-.177	.152	-.085
Agreement with friends	.070	.336**	.000
Sorting out worries	.327**	.325**	.301*
Contentment	.187	.419**	.206

* $P < .05$
** $P < .01$

TABLE 7

THE INTERNAL SCALE (CORRELATIONS)

QUESTION	1.1	1.4	1.6	1.8	1.15	1.17	2.1b	2.2a	2.3b	2.4c	2.5b	2.6b
1.1	1.0											
1.4	.116	1.0										
1.6	-.060	.140	1.0									
1.8	.417**	-.115	-.042	1.0								
1.15	.075	-.080	-.192	.279*	1.0							
1.17	.031	.202	.137	-.080	-.077	1.0						
2.1b	.164	-.128	.048	.239*	.323**	-.084	1.0					
2.2a	.165	-.027	-.160	.263*	.133	.090	.089	1.0				
2.3b	.217	.242*	-.070	.141	-.177	.206	-.030	.181	1.0			
2.4c	.181	.070	-.122	.015	-.024	-.044	-.122	-.005	.340**	1.0		
2.5b	.033	.070	.038	-.010	-.012	.327**	.013	-.091	.129	.302**	1.0	
2.6b	.062	.131	.187	.188	.025	.182	.216	.131	.128	-.033	.274*	1.0

N = 72

Alpha = .39

* P < .05
** P < .01

TABLE 8

CHANCE (CORRELATIONS)

QUESTION	1.2	1.5	1.7	1.9	1.16	1.18	2.1a	2.2c	2.3c	2.4a	2.5c	2.6a
1.2	1.0											
1.5	.133	1.0										
1.7	.224	.314**	1.0									
1.9	.349**	.103	.467**	1.0								
1.16	.244*	.161	.225	.140	1.0							
1.18	.119	.253*	.307**	.365**	.363**	1.0						
2.1a	-.040	.133	.467**	.310**	.168	.304**	1.0					
2.2c	.108	-.137	.153	.189	-.177	-.121	.164	1.0				
2.3c	.171	.164	.029	.152	.301*	.210	.156	.017	1.0			
2.4a	.196	.140	.176	.278*	.336**	.218	.223	.088	.154	1.0		
2.5c	.307**	.325**	.226	.267*	.083	.174	.132	-.048	.126	.194	1.0	
2.6a	.262*	.276*	.360**	.377**	.169	.419**	.378**	.021	.310**	.406**	.350**	1.0

N = 72

Alpha = .75

* P < .05
** P < .01

TABLE 9

POWERFUL OTHERS (CORRELATIONS)

QUESTION	1.3	1.10	1.11	1.12	1.13	1.14	2.1c	2.2b	2.3a	2.4b	2.5a	2.6c
1.3	1.0											
1.10	.202	1.0										
1.11	.274*	.212	1.0									
1.12	-.008	.257*	.177	1.0								
1.13	.160	.042	-.064	.064	1.0							
1.14	.206	.158	-.048	.238*	.220	1.0						
2.1c	.143	.139	.260*	.200	.124	-.113	1.0					
2.2b	.046	.128	.023	.143	.117	.017	.337**	1.0				
2.3a	-.085	-.027	-.221	-.183	.084	-.058	.003	-.057	1.0			
2.4b	-.133	.000	.047	.076	.189	-.009	.058	.014	.295*	1.0		
2.5a	.067	.029	.301*	.029	-.093	-.202	.210	.039	-.106	.098	1.0	
2.6c	-.056	.080	.039	.206	.028	.022	.126	.022	-.022	.052	.185	1.0

N = 72

Alpha = .47.

* P < .05
** P < .01

TABLE 10

FITNESS (CORRELATIONS)

GENERAL

QUESTION		1.1	1.7	1.13	3.1	4.1
1.1	(I)	1.0				
1.7	(C)	-.488**	1.0			
1.13	(P)	-.336**	.243*	1.0		
3.1		.300*	-.069	-.155	1.0	
4.1		.347**	-.150	-.167	.452**	1.0

N = 72

SPECIFIC

QUESTION		2.1a	2.1b	2.1c	3.7
2.1a	(C)	1.0			
2.1b	(I)	-.214	1.0		
2.1c	(P)	.025	.482**	1.0	
3.7		-.157	.352**	.207	1.0

N = 72

* $P < .05$
** $P < .01$

TABLE 11

APPEARANCE (CORRELATIONS)

GENERAL

QUESTION		1.2	1.8	1.14	3.2	4.2
1.2	(C)	1.0				
1.8	(I)	-.208	1.0			
1.14	(P)	.189	-.138	1.0		
3.2		-.008	.017	.053	1.0	
4.2		-.071	.011	.220	.567**	1.0

SPECIFIC

QUESTION		2.2a	2.2b	2.2c	3.8
2.2a	(I)	1.0			
2.2b	(P)	.327**	1.0		
2.2c	(C)	-.167	.095	1.0	
3.8		.471**	.060	-.037	1.0

** $P < .01$

TABLE 12

ACCEPTANCE BY FRIENDS (CORRELATIONS)

GENERAL

QUESTION		1.3	1.9	1.15	3.3	4.3
1.3	(P)	1.0				
1.9	(C)	.235*	1.0			
1.15	(I)	-.157	-.085	1.0		
3.3		.189	.048	.169	1.0	
4.3		.089	.058	.256*	.575**	1.0

SPECIFIC

QUESTION		2.3a	2,3b	2.3c	3.9
2.3a	(P)	1.0			
2.3b	(I)	-.737**	1.0		
2.3c	(C)	-.128	.088	1.0	
3.9		.543**	-.452**	.027	1.0

* $P < .05$
** $P < .01$

TABLE 13

AGREEING WITH FRIENDS

GENERAL

QUESTION		1.4	1.10	1.16	3.4	4.4
1.4	(I)	1.0				
1.10	(P)	-.117	1.0			
1.16	(C)	-.055	.068	1.0		
3.4		-.141	.625**	.067	1.0	
4.4		-.260*	.518**	.119	.736**	1.0

SPECIFIC

QUESTION		2.4a	2.4b	2.4c	3.10
2.4a	(C)	1.0			
2.4b	(P)	.017	1.0		
2.4c	(I)	-.139	-.683**	1.0	
3.10		.089	.029	-.065	1.0

* $P < .05$
** $P < .01$

TABLE 14

SORTING OUT WORRIES

GENERAL

QUESTION	1.5	1.11	1.17	3.5	4.5
1.5 (C)	1.0				
1.11 (P)	.180	1.0			
1.17 (I)	.011	-.191	1.0		
3.5	-.127	.103	-.066	1.0	
4.5	-.222	-.014	.106	.252*	1.0

SPECIFIC

QUESTION	2.5a	2.5b	2.5c	3.11
2.5a (P)	1.0			
2.5b (I)	-.446**	1.0		
2.5c (C)	-.106	-.040	1.0	
3.11	-.085	.080	.077	1.0

* $P < .05$
** $P < .01$

TABLE 15

CONTENTMENT

GENERAL

QUESTION	1.6	1.12	1.18	3.6	4.6
1.6 (I)	1.0				
1.12 (P)	.073	1.0			
1.18 (C)	.002	.180	1.0		
3.6	.153	.149	.053	1.0	
4.6	.074	.162	.087	.289*	1.0

SPECIFIC

QUESTION	2.6a	2.6b	2.6c	3.12
2.6a (C)	1.0			
2.6b (I)	.003	1.0		
2.6c (P)	-.084	.378**	1.0	
3.12	.078	.139	.184	1.0

* $P < .05$
** $P < .01$

TABLE 16

RISK TAKING

QUESTION	5.1	5.5
5.1	1.0	
5.5	.024	1.0

TABLE 17

SUSCEPTIBILITY

QUESTION	5.2	5.6	5.10	5.12
5.2	1.0			
5.6	.354**	1.0		
5.10	-.063	.118	1.0	
5.12	.133	.231	.609**	1.0

** $P < .01$

TABLE 18

GOOD HEALTH

QUESTION	5.3	5.4	5.8	5.9
5.3	1.0			
5.4	.403**	1.0		
5.8	.422**	.584**	1.0	
5.9	-.074	-.001	.012	1.0

TABLE 19

NEWNESS

QUESTION	5.1	5.7	5.11
5.1	1.0		
5.7	.010	1.0	
5.11	.082	.046	1.0

** $P < .01$

TABLE 20

Correlations between the valuation of constructs and scales

CONSTRUCT	SCALE		
	INTERNAL	POWERFUL OTHERS	CHANCE
Fitness - general	.300*	-.155	-.069
- specific	.352**	.207	-.157
Appearance - general	.017	.053	-.088
- specific	.471**	.060	-.037
Acceptance - general	.169	.189	.048
- specific	-.453**	.543**	.027
Agreement - general	-.141	.625**	.067
- specific	-.065	.029	.089
Worries - general	-.066	.103	-.127
- specific	.080	-.085	.077
Contentment - general	.153	.149	.053
- specific	.139	.184	.078

TABLE 21

CLOSENESS OF I, P AND C CORRELATIONS WITHIN CONSTRUCTS

CONSTRUCT		I - P	I - C	P - C
FITNESS -	general	-.336**	-.488**	.243*
	specific	.482**	-.214	.025
APPEARANCE -	general	-.138	-.208	.189
	specific	.327**	-.167	.095
ACCEPTANCE)-	general	-.157	-.085	.235*
BY FRIENDS)	specific	-.737**	.088	-.128
AGREEING)-	general	-.117	-.055	.068
WITH FRIENDS)	specific	-.683**	-.139	.017
SORTING OUT)-	general	-.191	.011	.180
WORRIES)	specific	-.446**	-.040	-.106
CONTENTMENT -	general	.073	.002	.180
	specific	.378**	.003	-.084

TABLE 22

Construct Validation

FITNESS Construct			
Defined by Author	Responses	Originated by Pupils	Responses
Endurance	24	Taking enough exercise	3
Strength	14	Keeping fit/taking care of oneself	9
Suppleness	-	Pushing body to the limit	1
Recovery	-	Physical ability	5
Situation related	-	Proper food	2
		Proper weight	10
Defined by Colleagues			
Psychological endurance	-		
Not quitting	-		
Change in fitness over time	-		
TOTAL	38		30

APPEARANCE Construct			
Defined by Author	Responses	Originated by Pupils	Responses
Physical features	21	Conformity	7
Grooming	20	Non-conformity	4
Clothing	31	Habits	1
Jewellery	-	Strength	2
Posture	-		
Gesture	-		
Body movement	-		
Defined by Colleagues			
Skin colour/tone	5		
Smell	-		
Voice	-		
Hygiene	13		
Charisma	-		
TOTAL	90		14

ACCEPTANCE BY FRIENDS Construct			
Defined by Author	Responses	Originated by Pupils	Responses
Being liked by friends	21	Personality	1
		Sharing	1
Being admired by friends	-	Conforming	4
		Similar interests	1
Being accepted for what you are	16	Getting on well with others	9
Tolerance/ consideration	1	Being friendly	1
Joining in activities	10	Trust	1
		Agreement	2
Defined by Colleagues		Not being picked upon	2
Respect	-		
Self identity/image	-		
TOTAL	48		22

AGREEING WITH FRIENDS Construct			
Defined by Author	Responses	Originated by Pupils	Responses
Wanting to be accepted	4	Similar interests	3
		Being happy with friends	1
Wanting to be liked	-	Conformity	9
Lack of confidence	-		
Similar attitudes	39		
Similar behaviour	7		
Defined by Colleagues			
Non-conformity	3		
TOTAL	53		13

SORTING OUT WORRIES Construct			
Defined by Author	Responses	Originated by Pupils	Responses
Feelings in response to stress	15	Self control	1
Behaviour in response to stress (incl. seeking help)	29		
Reacting to situations (without seeking help)	21		
Physical distress	-		
Past experience	-		
TOTAL	65		1

CONTENTMENT Construct			
Defined by Author	Responses	Originated by Pupils	Responses
Feeling happy/ enjoying life	39	Excitement	3
		Good friends	8
Frequency of feelings	1	Feeling good	3
Cause of enjoyment	-	Being pleased with oneself	2
Defined by Colleagues		Enjoying what one does	2
Knowing oneself	2		
Adaptability	-		
Self satisfaction	-		
Absence of unhappiness	12		
Learning to be happy	-		
TOTAL	54		18

TABLE 23

Question	Scale Involved	Correlation Item : Total Scale	Alpha of Scale if Item removed
1.1	Internal(I)	.28	.35
1.2	Chance(C)	.34	.74
1.3	Powerful Others(P)	.19	.45
1.4	I	.11	.39
1.5	C	.33	.74
1.6	I	.02	.42
1.7	C	.52	.72
1.8	I	.20	.36
1.9	C	.53	.72
1.10	P	.27	.42
1.11	P	.21	.44
1.12	P	.27	.43
1.13	P	.22	.44
1.14	P	.10	.47
1.15	I	.07	.40
1.16	C	.36	.74
1.17	I	.18	.36
1.18	C	.45	.72
2.1a	C	.41	.73
2.1b	I	.12	.38
2.1c	P	.35	.39
2.2a	I	.10	.39
2.2b	P	.20	.44
2.2c	C	.04	.77

TABLE 23 (contd)

2.3a	P	− .05	.52
2.3b	I	.21	.36
2.3c	C	.31	.74
2.4a	C	.42	.73
2.4b	P	.16	.46
2.4c	I	.04	.42
2.5a	P	.12	.46
2.5b	I	.30	.31
2.5c	C	.36	.74
2.6a	C	.61	.71
2.6b	I	.36	.31
2.6c	P	.14	.46

ALPHA RELIABILITIES

Internality	.39
Powerful Others	.47
Chance	.75

CHAPTER 5

THE PILOT EXERCISE

5.1 INTRODUCTION

The full results of the Prototype Exercise were described in detail in the preceding chapter. The summary contained a number of recommendations which sought to retain the most successful features of the measure whilst at the same time suggesting various developments for further progress. This was taken into account when designing the next measuring instrument (Appendix 1) to be used in the Pilot Exercise.

The measure was still based upon the earlier rationale of a balanced view of health embracing physical, social and mental dimensions. The individual items would again represent internality, powerful others and chance scales together with the range of associated factors described in the initial phase of the research programme. It was, therefore, an extension of the Prototype Exercise that gave birth to this Pilot Exercise, a movement towards refinement and further academic credibility based upon adequate research and development.

5.2 PURPOSE

The Pilot Exercise was designed to pursue a number of objectives the absence of which may have undermined the academic status of the final programme. The Prototype Exercise, though proving highly successful, had been very much an initial foray into this field of research with nothing to substantiate its design other than personal philosophy of health. The Pilot Exercise, on the other hand, sought to build upon

this foundation and refine the research material sufficiently to permit a large scale programme to be undertaken later with confidence and competence.

The purpose of this exercise may be summarised as follows:

i) To confirm the findings of the Prototype Exercise.

ii) To test the significance and validity of the changes made to the initial measuring instrument.

iii) To determine whether the alternative items relating to each construct were necessary.

iv) To seek means of reducing the number of items without loss of quality.

v) To carry out a concurrent validity test on the original item pool.

vi) To improve the representativeness of the sample population.

vii) To undertake associated qualitative research with a selection of pupils.

viii) To improve the administrative procedure of the exercise.

ix) To develop an independent administration protocol for teachers to carry out similar research.

x) To enable an appropriate computer programme to be developed.

xi) To facilitate the subsequent administration of a large scale research project.

xii) To confirm the development of original Health Locus of Control Scales.

5.3 RESEARCH DESIGN

This may be considered under a number of headings:

5.3.1 Sample Population

Whereas the Prototype Exercise was carried out in one school it was considered to be more representative if the piloting was undertaken in two schools. Though still somewhat selective in terms of all schooling this would be less open to criticism than the initial research. It would also enable an interesting comparison of the schools to be made which might reveal differences related to pupils as individuals or to the educational experience received. The sample, therefore, comprised two groups from each of two schools in Thamesdown. Consequently schools were approached and permission obtained for this phase of the research programme to be undertaken with the pupils. The sample was two groups of mixed ability pupils (23 and 21) in one school and two groups of high (23) and low (24) ability in the other, making a total of 91 pupils in the sample population in all. The pupils were again from the third year secondary grade since the questionnaire had been specifically designed and tested for this particular age group.

5.3.2 The Questionnaire

The measure used in the Prototype Exercise was suitably modified in accordance with the results described and discussed in the preceding chapter. Among the major changes were:

i) A standardised response system for all participants containing a NOT SURE column.

ii) The re-wording of several items to sharpen the division between the three Locus of Control scales.

iii) The introduction of two new situations for the "Appearance" and "Agreeing with friends" specific constructs.

iv) The development of new items related to the "risk taking", "newness", "susceptibility" and "good health" scales.

v) A simpler numbering system for items.

The full questionnaire (Appendix I) contained 74 questions all of which required a response in a standard 7 point format. Personal details of sex type and date of birth were included for identification purposes in the concurrent validity test (see 5.3.4) whilst at the same time retaining sufficient anonymity to encourage the optimal level of truthful response by pupils. Instructions for the completion of the questionnaire were given on the front page with the intention of making the exercise an independent 'package' which could be repeated in future by teachers in the absence of the author.

5.3.3 The Structured Interview Schedule

Though some effort had been made in the Prototype Exercise to obtain feedback from the three groups regarding the measuring instrument this was not regarded as of sufficient quality. It did not, for instance, probe the question of pupil commitment to the exercise, the tendency to give socially approved answers or personal problems of perception. To be sure each group was asked to identify questions causing difficulty of wording or style but this may not have influenced the response of pupils in a group situation with its many conflicting peer pressures.

It was decided, therefore, to design and incorporate a research interview in the Pilot Exercise, to be carried out as soon as conveniently possible after the completion of the questionnaire. The value of such interviews is that it helps identify problems which may be missed by the more impersonal questionnaire method. The purpose of the interview component was primarily to assess the pupils' evaluation, and experience, of the measuring instrument. However, it might well reveal additional information on the subject content (Locus of Control) which the more clumsy questionnaire had not been able to detect.

By interviewing individuals it was hoped to gain further insight into pupil motivation, error scoring, evaluation of the exercise and problems associated with the completion of the questionnaire. Equally, new ideas were being sought which might improve the design and accuracy of the measure in recording and representing the characteristics involved.

An interview schedule (Appendix II) was designed for use with 10 pupils from those having completed the questionnaire. The pupils were randomly selected from each group by use of a random number table (Appendix III) and arrangements made to carry out the interviews in the lunch time during the week following the formal measurement.

The schedule was designed to facilitate the establishment of rapport with pupils by having factual questions in the first part. Questions were phrased in such a way as to avoid bias whilst prompts were only included should they be necessary with pupils who were unable to express their feelings. The prompts also acted as a coding system for recording purposes which thereby enabled a closer interaction to be sustained with interviewees.

Though the schedule was pre-determined it was always intended to retain sufficient flexibility in its administration to follow up particular points of interests with additional questions as deemed appropriate in the presenting circumstances. The schedule, therefore, should be perceived as a framework which guided the course of the interview but did not necessarily determine the final outcome.

5.3.4 The Concurrent Validity Exercise

A validation component had been incorporated into the Prototype Exercise in respect of assessing the extent to which pupil perception of constructs was congruent with that of the author and colleagues. The results of this exercise have been described in detail in the preceding chapter.

An additional test of the validity of the questionnaire was considered appropriate as further evidence of its authenticity. It

was, therefore, decided to administer a second measure to the pupils who had completed the new Locus of Control scales being developed in this project. Hopefully a reasonable correlation between the two measures would be obtained to justify the validity of the new scales but not of such a high correlation that the new scales could be highly predicted from the existing measure, and therefore, deemed superfluous.

The Locus of Control measure selected for this validation exercise was the Nowicki-Strickland Locus of Control Scale for Children (1973). The measure (Appendix IV) has been extensively used in psychological assessment of children ranging from age 8 to 18 with appropriate modification to wording and construct. A series of forty items, scored in an external direction, is put to participants who have to respond in a YES/NO format. A range of subject matter is covered in the scale to produce a generalised Locus of Control measure for children. The Nowicki scale has been well researched to date. Internal consistency via the split-half method ranged from $r = .63$ with pupils aged eight, to $r = .81$ for pupils aged eighteen. Test-retest reliabilities ranged from .63 to .71 for the same age groups respectively. Construct validity was demonstrated by significant ($p < .01$) correlation with the Intellectual Achievement Responsibility scale (Crandall et al. 1965) and significant ($p < .05$) correlation with the Bialer-Cromwell Children's Locus of Control Scale (1961).

General

The scene was set, therefore, to continue the second phase of the research programme through a further assessment of the modified new scales being developed together with a qualitative follow-up component and a subsequent comparative measurement exercise. The basic purpose of the phase was again to evaluate progress made in producing an instrument which could be eventually offered to teachers as a mechanism for enhancing their understanding of the young people in their charge and thereby enabling further help to be given in the process of personal growth. The extent to which the scales would fulfil such expectations was awaited with great interest.

5.4 ADMINISTERING THE QUESTIONNAIRE

The modified questionnaire was piloted with two groups in each of the two local comprehensive schools on 16 and 23 October respectively.

School 1

The two groups (A and B) selected by the school to take part in this exercise represented higher and lower ability bands as determined by the school and based upon primary school reports initially together with subsequent secondary school progress. The exercise was carried out during the lesson normally allocated to Biology, the two groups being seen in the same room during successive lessons on the day in question.

After being introduced by the Biology teacher to the groups the purpose of the exercise was briefly explained by the author. Emphasis

was placed upon the value of the pupils' opinions, the anonymity and confidentiality of their responses, and the fact that no right or wrong answers were involved. In other words, this was not a test!

The pupils were given the questionnaire and asked to read the first page and complete the sample question. The response system was then reinforced by the author with special reference being made to uncertainty (NOT SURE column) and lack of question comprehension (BLANK RESPONSE). The pupils on each occasion, was then invited to continue with the exercise at their own pace and without reference to any fellow pupil's opinions or responses. Following each session the pupils were thanked for their help with the investigation.

Group A (higher ability)

This group was made up of 8 boys and 15 girls. The group was quite lively with conversation when first receiving the questionnaire but following the introduction worked very quietly and diligently throughout the exercise. Virtually no comment was made either between pupils or with the author. The first completed questionnaire took 11 minutes whilst the last one took 20 minutes. No guidance or advice was sought by any pupil which gave the impression that no problem of readability or instruction was being experienced. The subsequent analysis would help to determine whether this impression had been accurate or not.

Group B (lower ability)

This group of 24 pupils comprised 10 boys and 14 girls. Whereas group A had gone from being lively to very quiet, group B were somewhat the opposite. After listening intently and very quietly to the introductory explanation the pupils 'threw' themselves wholeheartedly into the exercise. A small number of pupils had to be dissuaded from discussing their answers whilst completing the exercise. One girl had difficulty understanding the meaning of two questions and required some help in this respect. An impression was received of a greater degree of difficulty being experienced with the concepts involved though whether this led to more blank responses or not would remain to be seen. The first completed questionnaire took 13 minutes and the last one 26 minutes.

Comment

The pupil response was extremely satisfying to observe. Though both groups were of varying personality each completed the task adequately in its own way. The support of the teacher in his introduction and subsequent presence during the session helped give further credibility and significance to the exercise. In general it appeared as though the pupils responded to the request for their help in a positive manner with no obvious resentment or resistance being shown to completing the task in hand.

School 2

The two groups (C and D) selected by the school were 3rd year pupils of mixed academic ability. They were asked to carry out the exercise during the double period normally allocated to Social Education.

The groups were seen during successive periods on the same afternoon of 22nd October.

The questionnaire was introduced to both groups as described earlier for school 1. Since more time was availabe for the research in school 2 it was decided to administer a second short questionnaire to each group in order to investigate the concurrent validity of the newly developed Health Locus of Control Scales.

Group C

This group of 23 pupils involved 12 boys and 11 girls. After the initial introduction the pupils carried out the exercise with very few difficulties. The first completed questionnaire took 14 minutes and the last one 21 minutes. Pupils were requested to check for any unintentional omissions or duplicated responses (e.g. more than 1 tick on one line) as they finished.

Following this first part of the lesson a short group discussion was led on the concept of health. Issues relating to friendship patterns loneliness, depression and alcoholism were raised as illustrations of the social and mental dimensions of health.

The group was then asked for its help in completing the comparative instrument (Nowicki-Strickland Children's Locus of Control Scale). A

few groans ensued at the suggestion of further form-filling but the pupils nonetheless cooperated without any difficulty whatsoever. The two questionnaires were then clipped together by pupils and collected. The pupils were again thanked for their help in carrying out the task.

Group D

This group of 21 pupils comprised 8 boys and 13 girls. As they had previously been involved with a physical education session there was a short delay in pupils reaching the room.

The introduction was again made with emphasis placed upon the value of pupils' opinions, confidentiality and the response system. The pupils then completed the questionnaire at their own pace with the first and last one taking 11 minutes and 22 minutes respectively. This differential time factor created a minor problem in occupying the early finishers without distracting other pupils. A small amount of discussion was therefore allowed provided that no amendments were made to existing responses.

Following a short group discussion on health and personal decision-making the pupils were asked for their help in completing the comparative questionnaire. In contrast to group C there was no sign of any negative reaction, in fact quite the reverse. The group most willingly carried out this second task as requested during the remainder of the period.

Comment

The research appeared to be quite satisfactory as far as the data collection component was concerned. The comments of the teacher supported this evaluation since he felt that both groups really took the exercise seriously and made every effort to comply. He believed that each group would easily have shown their disinterest in anything which did not appeal to them so the apparent concentration and application was clear evidence of a positive reaction to the exercise.

I personally felt that both groups did extremely well to complete the two questionnaires in one session. I feel that the pupils responded to my genuine request for their help together with my stated valuation of their opinions and reassurance of confidentiality. As a matter of interest one pupil in each group observed that they could be identified by name from the date-of-birth data. I therefore invited them to omit this information if they were worried about such identification though I confirmed my intention not to use the information for that purpose.

Again I am quite certain that the stated support of the teacher for the exercise was significant in helping to motivate pupils to take a full part in the research project.

5.5 THE STRUCTURED INTERVIEWS

5.5.1 School 1

Five pupils were randomly selected from the groups in school 1 and asked at the end of the lessons whether they would be prepared to take part in the interviews. With their agreement an appointment was made

to meet them in the biology room during two lunch breaks of the same week. The following is a brief account of their views expressed during these interviews:

Keith (Group B)

was a very quiet boy who needed considerable encouragement to give his views. He evaluated the exercise as being tolerable (all right) especially as an alternative to the normal biology lesson. Whilst he was not happy with the task he found it became boring towards the end of the questionnaire which he felt was too long. Being asked for his opinions was not displeasing but the focus on health did not have any major effect upon his reaction to the exercise.

Keith had experienced difficulty with quite a few questions which resulted in him using the NOT SURE column on several occasions. He stated that he had not been asked his opinion on such subjects hitherto and, therefore, found it difficult to express a view instantly as required. Questions relating to friends particularly caused him difficulty.

There was no obvious comprehension problem according to Keith, a statement reinforced by the fact that no blank responses were recorded. The response system and pattern of boxes was clearly appreciated by Keith's sudden show of enthusiasm for this method as opposed to having to compose answers. He found the instructions adequate in describing the response format and felt that his ability to respond, where he had a particular view, much helped by the prescribed formula.

Some questions had undoubtedly stimulated Keith to consider how he felt about a number of issues though he was not always able to resolve the inner debate sufficiently to agree or disagree. In truth he was very undecided, by his own appraisal, about several aspects of health incorporated into the enquiry. Keith may well have been affected by the exercise in terms of greater self awareness though it may be some time before he has progressed through this stage. He appears to be the type of young person who would benefit from a follow-up interview at a later date.

Adam (Group B)

was more able to express his views in the interview situation than Keith. He found the questionnaire generally interesting and reiterated the belief, without any prompting, that it was better than the usual lesson. Adam seemed to have been quite happy about being asked his opinions though the focus upon health did not really influence his evaluation.

The length of the questionnaire was considered to be all right, no mention being made of any negative feeling in this response. Adam's apparent confidence at interview appeared to be reinforced by his recall of not having used the NOT SURE boxes at all or of having left any rows blank through lack of understanding. This consistency would seem to indicate a decision to answer according to true belief rather than any tendency towards social desirability.

Some questions were considered by Adam to have been hard to understand at first glance due to their wording but became clearer upon further thought. This led to a number of alterations being made to the

initial response, a process increased by Adam's acceptance that the questions really made him clarify his opinion on the specific issues raised.

The point was made by Adam on at least two occasions that many of the questions didn't seem to relate to health. This showed a clear conceptual difference between author and pupil which was briefly clarified in the discussion. The comment does, however, draw attention to the need to incorporate a reference to this aspect in future research as the incongruence could influence pupil response to such research.

Sarah (Group B)

had found the exercise interesting on account of the fact that she enjoyed being asked her opinion and stated that this was unusual at school. In general she had encountered very little difficulty in either understanding the questions or stating her views. This was facilitated no doubt by her ability, and willingness, to give an opinion as opposed to the indecision of some pupils.

The questionnaire was considered to be 'a bit long' but not boring. No blank responses were used, reinforcing Sarah's assertion of understanding the questions. The few occasions on which a NOT SURE response was made concerned general statements which Sarah felt could not be answered without a more precise context. The response system was preferred to an open-ended approach requiring written answers. Though the situational questions (19 - 36) did not create any difficulty it was suggested that they might be for pupils who did not read the instructions alongside the questions. In general it appeared

as though Sarah had coped very well with the exercise and enjoyed the experience of expressing her opinions.

Kevin (Group A)

found the questionnaire reasonable, not particularly interesting but 'quite all right'. He seemed to be fairly pleased to be asked his opinion but not to the point of enthusing over it! Kevin said how surprised he had been at the length of the questionnaire but not in a negative way for he went on to say that he had become increasingly interested as he continued its completion.

None of the questions were hard to understand according to Kevin (a statement supported by his non-use of blank responses). In the vast majority of cases he was able to state an opinion but on a few occasions he found some difficulty in selecting his strength of agreement or disagreement. One question highlighted as being difficult was number 22 which related to a need for advice from someone concerning personal appearance. His problem stemmed from his view that he found it difficult to tell what people really thought as opposed to what they actually stated at the time.

Though Kevin felt that his opinions had not been changed by the exercise he had decided that he needed to get fitter than at present particularly with regard to his stamina. Being of small stature it may be that he is conscious of his physical limitations and is trying to do what he can to achieve something physically that is within his capabilities. This does seem to suggest that the questionnaire had had an effect in reminding or sensitising Kevin to this characteristic especially in view of the inclusion of questions referring to fitness.

Nicola (Group A)

was a very presentable young lady whose appearance much belied her age of fourteen. She had found the exercise interesting in being a pleasant change from the normal lesson. She had liked being asked her opinion as this was not a common occurrence but the focus on health was incidental to this reaction. No particular difficulty had been experienced in understanding the questions, a fact reinforced by Nicola's non-use of any blank responses. The only questions which she had found hard to answer were those relating to friendship patterns.

Nicola selected a NOT SURE response on a number of occasions as she felt that there was a case for and against the statement being made.

In the interview she agreed that she normally tries to see both points of view in any debate or argument.

The questionnaire was if anything regarded as too short which seems to indicate a reasonable degree of satisfaction with the exercise. Nicola, as with her colleagues, preferred the use of a forced-choice response system to that of a procedure requiring written answers to questions. No doubt in her case this would have necessitated quite extensive answers incorporating respective viewpoints.

Finally Nicola considered that the exercise had caused her to change her concept of health from the narrower 'not being ill' focus to include the wider social dimensions. This was an encouraging response and demonstrated the effect that research experience in itself could have upon some participants.

5.5.2 School 2

In this school 5 pupils in total were selected at random from the two groups that had taken part in the research project. Interviews were then arranged by the teacher to take place during school hours on the afternoon of the following day. This required a small room to be made available and a note issued to each child stating the interview time and acting both as a reminder and legitimate reason for leaving the lesson being taken at the time.

Christopher (Group C)

was a lively young man who seemed to be quite at ease. He stated that the survey was a good idea and that everyone should be asked the sort of questions put to them. He enjoyed giving his opinion on most subjects, a statement appearing to be congruent with his extrovert personality.

He found very few questions difficult to understand or answer and didn't leave any blank rows of boxes. The one question which did create uncertainty was that of influencing friendship (question 3). The wording was considered by Christopher to be somewhat misleading and would benefit from being re-written.

The questionnaire's length was not a deterrent; in fact Christopher would have liked more questions to answer. In line with his fairly positive approach and self confidence only one NOT SURE response was made. The response system did not prove difficult though on a few occasions the strength of response required additional thought. His opinions had not really changed as a result of the project.

The interview finished with a short discussion on his acceptance of my assurance regarding confidentiality. He felt that people who were not genuine could be 'seen through' by facial expression. We briefly discussed people who perhaps could hide such non-verbal signals but he still believed in my stated assurance with regard to this exercise. In general Christopher was a very likeable lad who demonstrated a zest for life with youthful exuberance.

Charlotte (Group C)

found the task interesting as she enjoys filling in forms of one sort or another. Her anticipation of the questionnaire was of questions related to health behaviour rather than the opinions of situations and personal characteristics included in this exercise.

Charlotte thought that the questionnaire would be shorter than it actually was but did not express any negative evaluation of it since she completed it sooner than expected. No problems of comprehension were experienced and, therefore, no blank responses made to any question. The NOT SURE option was selected in about 5 cases. The response system using boxes was much preferred to an open system requiring written answers. Charlotte had difficulty in expressing an answer to 2 questions, feeling that an option for a written answer may then have been helpful.

The significant effect of the exercise on Charlotte was the fact that she really was made to think about her views on various issues. She felt that this clarification process made the task so valuable. Not only had Charlotte been stimulated to really consider her opinions she also felt that her views had changed as a result of such stimulation.

Her concept of health in particular had been modified as a direct result of this research experience.

Diane (Group C)

had anticipated a boring session when the teacher had initially mentioned that a survey was to be carried out with the group. When it came to the actual exercise itself she 'quite liked' being asked her opinion and was additionally motivated by the health focus involved. At first glance the questionnaire seemed very long but her attitude changed to one of being fairly positive once she had progressed quickly through the questions.

Very few questions were difficult to understand or answer resulting in only 1 blank response and very few NOT SURE responses being made. Diane was the only interviewee who would have preferred written answers to the use of boxes as used in this project. She felt that she would like to have qualified her opinions with further information than the boxes currently allow to be provided.

Diane criticised the similarity of questions which related to the same construct in the early part of the questionnaire. She felt that this was too repetitive and made that component somewhat boring. It appeared as though Diane misinterpreted the purpose of a few questions for although she clearly had an opinion she seemed to opt for a NOT SURE response where she expressed a disagreement with the statement. Questions 12 and 25 were cited as examples of this confusion.

Diane stated that she had really been made to 'think through' her opinions and was surprised at what she had come to realise her views

really were in some cases. For instance she now accepted that friendship could be determined as much by one's personal characteristics as by other people and the notion that "you are either friends or you aren't". Such a reaction is rewarding in showing that internality is neither inherent nor static but a dynamic component of personal growth.

David (Group D)

had a fairly neutral attitude towards the exercise feeling that it had been "all right" and "better than the normal lesson". Prior to the session he had felt that the project was going to be fairly boring but in fact it had turned out better than he had expected.

David had not found any questions particularly difficult to understand (no blank responses being made) or answer for any other reason. The NOT SURE option had been used on a number of occasions where David wasn't certain of his opinion. He much preferred the box system to that of composing written answers. David had some difficulty in identifying his strength of feeling for or against some statements with the net result of him usually selecting the "slightly" option. Again, at first sight of the questionnaire, David had reacted negatively and thought it would "take ages" to complete. He was pleasantly surprised by the speed at which he was able to complete the task.

David appeared to be an easy-going lad who was reasonably content to go along with the exercise. He didn't particularly want to give opinions or feel pleased at being presented with such an opportunity. There was no sparkle within him wanting to express himself in this

area as far as could be detected in this interview, rather a passive acceptance of another activity to endure as part of schooling.

Lisa (Group D)

very much dislikes having to give verbal opinions on any subject and somewhat less dislikes having to comment similarly in writing. Her anticipation of the session was rather negative, as might be expected from the above, and she had felt that she would be glad when it was over so that she could go home to see her visiting cousin.

Lisa, in spite of her reluctance, completed the exercise without encountering any difficulty of comprehension. The NOT SURE option was selected on several occasions as she was unable to form an opinion on the subject. Where a specific view was held Lisa always used the 'agree' or disagree' option, tending to demonstrate inability to clarify her strength of feeling.

In retrospect Lisa evaluated the exercise much more positively than prior to the session. It was "all right" in length and in general had 'not been as bad as she thought it would be'. The experience did not particularly stimulate Lisa to re-consider her views or change them in any way.

The impression given was of someone with low self esteem who had not received much encouragement to express opinions. Some effort was made in the short time available to do this very thing with Lisa though it would clearly require much more time and effort for any impact to be made on such a trait. Nonetheless since the opportunity presented itself for such comment it was taken. It is to be hoped that others too will 'take up the gauntlet' for all the Lisa's growing up to-day.

Comment

One consistent reaction which appeared in these interviews was the pupils' negative expectation of the exercise. All groups had been told in advance that a survey was to be undertaken with them but very little information other than this had been given. In most cases the experience of completing the questionnaire was much more favourable than the pupils' anticipation of it. Hopefully this reflects upon the design of the instrument in being easily answered and the reassurance given regarding confidentiality and dismissal of any notion of testing. The presentation of such enquiries does appear therefore to be a crucial element in determining motivation with appropriate presentation facilitating the true response required.

Again several interviewees stated how pleasantly surprised they had been with the speed at which they had been able to complete the questionnaire. First sight of a four page document may well be awesome to some pupils so that reassurance of the 'ease' factor at the introductory stage would again create a good climate in which to conduct the research.

Very few difficulties were experienced by pupils in understanding the various questions. This was not only stated by those interviewed but reinforced also by the very low rate of boxes left blank. Every encouragement had been given to pupils to avoid placing a tick against any question giving rise to comprehension problems. There is no reason to believe, therefore, that the evidence is anything but accurate in demonstrating a high level of pupil understanding of the questions presented to them.

An interesting outcome of these interviews was the perceived effect of the experience upon pupils' attitudes and beliefs. The fact that many questions were not apparently about health and the inclusion of a question probing conceptualisation of health seems to have stimulated a high proportion of pupils to rethink both their ideas on what good health really involves together with their own personal viewpoint of many related issues. Irrespective of any particular belief held the very fact that young adults have been stimulated to think through their assumptions, prejudices or 'acquired' beliefs is not only satisfying in itself but an acknowledgement of one particularly beneficial outcome of such an exercise.

Though a structured interview schedule had been designed the intention had always been to retain sufficient flexibility in its administration to accommodate unplanned issues arising in the interaction with pupils. By applying this principle it was possible to pursue specific topics of conversation that arose such as the question of Kevin wanting to get himself fitter, Christopher's views on non-verbal communication and Lisa's low self esteem. Such flexibility not only enabled the discussion to continue along pathways of interest to individual pupils but it also demonstrated to them that they were the important focus in the interview, that their opinions and beliefs counted rather than any impersonal set of numerical calculations.

In fact I felt that I did get to know the pupils somewhat even in the short time span (approximately 15 minutes) involved. Certainly the quality of this interaction was far higher than would possibly have been attained in any group setting where other forces often militate against mutual learning. Even though class teachers would clearly

have a better understanding of individuals there is still a good case for 'one-to-one' sessions in order that intimate feelings, on both sides, may be expressed without prejudice.

Class teachers would also be in a good position to follow up the initial 'interview' at a later date to check for growth and development in opinion or belief. Undoubtedly the relationship between teacher and pupil is crucial in such sensitive areas but given that both parties are able to contribute to the situation the possibility for regular counselling is both present and desirable.

In general I felt that the pupils recorded their true feelings about the questionnaire and that without being impolite they provided honest feedback in the interview of their experience. Though it was clear that the attitude towards having to complete the exercise was not over-enthusiastic initially the actual task proved more interesting and less onerous than had been expected. I felt that pupils had responded well to my request for help and had accepted my assurance of confidentiality. The interviews, though time consuming, had confirmed some of my feelings about pupils attitude towards the questionnaire and also contributed much to the quality of the research project. In pursuit of statistical significance it is very easy to overlook the fact that educational research is about people and the effect of schooling upon them. I hope that in some small way this project will add to the body of knowledge. If this is so then the interview programme certainly contributed to the quality of the research undertaken.

THE FINDINGS

5.6 THE FINDINGS

All tables relating to this chapter are in Part Two of the thesis.

5.6.1 The INTERNAL Scale

Questions 2, 5, 7, 10, 15, 18, 20, 23, 25, 28, 33 and 35 refer. Full details of the correlations between items are shown in Table 4 whilst item and scale means are illustrated in Tables 1-3.

Results

5.6.1.1 An alpha reliability coefficient of .524 was established for the scale.

5.6.1.2 Out of 66 correlations amongst the 12 items on the scale 50 were found to be positive (13 significant)* and 16 negative (1 significant).

5.6.1.3 Questions 7, 20 and 23 were consistently associated well with other items, showing 10 positive correlations and only 1 negative correlation in each case. TABLE 4.

5.6.1.4 Question 15 was least successful in having only 6 positive correlations and 5 negative correlations with other items. TABLE 4.

5.6.1.5 Group A (higher ability) scored a scale mean of 58.0 compared with 56.1 for group B (lower ability). TABLE 2.

5.6.1.6 Group C (mixed ability) scored a scale mean of 57.1 and group D (mixed ability) 57.9. TABLE 2.

* r = .206 and above

5.6.1.7 The scale mean for all males was 57.5 compared with 57.1 for females. TABLE 2.

5.6.1.8 Group A males scored the highest scale mean (62.1) and group B males the lowest scale mean (54.6). TABLE 2.

5.6.1.9 Group B females scored higher than group A females (57.1 to 55.8). TABLE 2.

5.6.1.10 Of the 12 scale items, question 7 (fitness) had the highest item mean (5.6). TABLE 3.

5.6.1.11 Question 10 (agreeing with friends) had the lowest item mean (3.4). TABLE 3.

5.6.1.12 All 12 items correlated positively with the full scale. TABLE 5.

Discussion

5.6.1.13 The high proportion of positive correlations with the number of them at a significant level and the Alpha reliability measure of internal consistency provides evidence of the INTERNAL scale's existence.

5.6.1.14 This is reinforced by the consistent associations between individual items and the full INTERNAL scale (See 1.12).

5.6.1.15 High ability, as in the Prototype Exercise, was again shown to be related to internality. Whereas the main cause of such a discrepancy had been lower ability girls in the earlier research, in this exercise the gender factor is not particularly apparent within the academic ability classification. This finding is reinforced by the lack of any differential between the mixed ability groups (C and D) as shown in Table 2.

5.6.1.16 Certain questions (e.g. 10 and 15) should be re-considered insofar as the former scored the lowest mean of the 12 INTERNAL items amongst all 91 pupils and the latter had the

highest number (5) of negative correlations with the other items in the INTERNAL scale.

5.6.1.17 Both the number of positive correlations (50) and Alpha reliability (.524) were improved compared with the results of the Prototype Exercise (43 positive correlations and Alpha = .39). To this extent it would appear that the various alterations to individual items in the scale have developed the scale's reliability and verified its existence as an entity for precise measurement.

5.6.1.18 The scale mean for this research was slightly lower (57.2) than for the Prototype Exercise (60.1). This finding was consistent for higher ability groups (58.0 - 59.6) and lower ability groups (56.1 - 58.4). Since the Prototype Exercise was carried out in May and the pilot exercise in October the respective pupils would be approximatey 7 months older in the earlier research. Such a finding reinforces the notion that internality increases with age as found in other studies (Nowicki-Strickland 1973, Parcel 1978).

5.6.1.19 Question 10 (agreeing with friends) had the lowest item mean (see 5.6.1.11) showing a low tendency by pupils to accept that they control the level of agreement in their friendship patterns. Whilst this finding may reflect upon internality it might also represent a valid and realistic appraisal of peer relationships for many pupils. The question records the degree of perceived internality rather than testing the validity of such perception.

5.6.2 The POWERFUL OTHERS Scale

Questions 3, 6, 8, 11, 13, 16, 21, 22, 26, 29, 31 and 36 refer. Full details of the correlations between items are given in Table 7 whilst item and scale means are illustrated in Tables 1, 2, 6 and 8.

Results

5.6.2.1 An Alpha reliability coefficient of .653 was established for the scale.

5.6.2.2 Out of 66 correlations between the 12 scale items 58 were found to be positive (20 significant*) and 8 negative (none significant). TABLE 7.

5.6.2.3 Group B had a slightly higher scale mean (46.3) than group A (43.5). TABLE 2.

5.6.2.4 Group B males had the highest scale mean (50.2) of any gender groups. Group C females had the lowest scale mean (42.0). TABLE 2.

5.6.2.5 The total scale mean for males was 47.2 compared with 43.4 for females. TABLE 7.

5.6.2.6 Males scored higher than females in 10 of the 12 items with one even. TABLE 6.

5.6.2.7 Question 2 had the highest item mean (5.0) and questions 21 and 26 the lowest (2.6). TABLE 6.

* r = .206 and above.

5.6.2.8 Question 11 was the most successful in having 11 out of 11 positive corelations (6 significant).

5.6.2.9 Questions 8 and 26 were the least successful items in the scale in having 7 positive correlations and 4 negative correlations.

5.6.2.10 All 12 item correlation positively with the full scale. (TABLE 8). Question 8 had the lowest such correlation (.008) and question 31 the highest (.483).

5.6.2.11 5 positive correlations out of 6 (2 significant) were established between general and specific constructs representing the POWERFUL OTHERS Scale. TABLE 12. The construct with a negative association related to 'acceptance by friends'.

5.6.2.12 The scale mean for the sample population was 45.0 compared with 54.2 in the Prototype Exercise.

Discussion

5.6.2.13 The improvement in Alpha reliability compared with the Prototype Exercise (.47 to .65) provides evidence of scale development and existence as an entity in its own right.

5.6.2.14 This is supported by an increase in the number of positive correlations (58) compared with the earlier phase of the research (48).

5.6.2.15 The positive correlations between corresponding general and specific constructs (TABLE 12) provide further evidence of the scale's identity.

5.6.2.16 The higher scores attributed to group B (lower ability) males, compared with group A males (50.2 - 45.4) reflect a higher differential than in the same groups in the Prototype Exercise (54.8 - 53.5). The finding is very interesting and worthy of further consideration in the next phase of the research programme.

5.6.2.17 The higher scale mean for all males (47.2) compared with females (43.4) reversed the finding in the earlier research. Further investigation would again appear necessary in this aspect of the research programme.

5.6.2.18 If dependency upon external factors decreases with age, as claimed by other researchers (Nowicki-Strickland 1973, Parcel 1978) then result 5.6.2.12 above is contradictory. The reason may well lie in the changes made to the wording of items representing this scale following the earlier research. Such items were not considered to represent sufficient strength of dependency upon others and were thus re-worded accordingly. The next phase of the research will test the consistent effect of this re-drafting process.

5.6.3 The CHANCE Scale

Questions 1, 4, 9, 12, 14, 17, 19, 24, 27, 30, 32 and 34 refer. Full details of the correlations between items are given in table 10 whilst item and scale means are shown in Tables, 1 2, 9 and 11.

Results

5.6.3.1 An Alpha reliability coefficient of .601 was established for the scale.

5.6.3.2 Out of 66 correlations between the 12 scale items 55 were found to be positive (18 significant)* and 11 negative (1 significant).

5.6.3.3 Group B (lower ability) had a much higher scale mean (47.2) than group A (higher ability) - 41.4. TABLE 2.

5.6.3.4 This differential applied within gender groups. Males (group B - 48.5, group A - 44.5) and females (group B - 47.2, group A - 39.8).

5.6.3.5 With the mixed ability groups it was found that group D consistently scored higher than group C in total, and within gender. TABLE 2.

5.6.3.6 Overall, males had a slightly higher scale mean than females (45.8 to 43.7).

* r = .206 and above

5.6.3.7 Question 4 (agreeing with friends) had the highest item mean (4.8) TABLE 9.

5.6.3.8 Question 24 (specific appearance) had the lowest item mean (2.5). TABLE 9.

5.6.3.9 Question 12 (contentment) was most successful in having 11 out of 11 positive correlations (5 significant) with other scale items. TABLE 10.

5.6.3.10 Questions 4 and 14 were least successful in having 7 out of 11 positive and 4 negative correlations with other scale items. TABLE 10.

5.6.3.11 All twelve items correlated positively with the full scale (TABLE 11). Question 4 had the lowest such correlation (.071) and question 17 the highest (.393).

5.6.3.12 When comparing the corresponding general and specific constructs relating to CHANCE, 6 out of 6 positive correlations were established. TABLE 12.

Discussion

5.6.3.13 Though the Alpha reliability has dropped from .75 to .60, compared with the prototype exercise, there is still considerable evidence of the scale's strength. The number of inter-item correlations (55 out of 66), the Alpha coefficient level, the item : full scale associations and the consistent correlations between general and specific constructs (5.6.3.12 above) all support this contention.

5.6.3.14 The academic rating factor (5.6.3.3. and 5.6.3.4) replicated the finding of the earlier research with the exception that both male and female consistently supported this association in the current research. The mixed ability groups (C and D) cannot be included in this proposal since the proportion of academic ability levels within each group is not known. However, the consistency of CHANCE scoring between the higher and lower ability groups both with and without a gender variable again reflects the scale's existence and operation in the exercise.

5.6.3.15 The total population scale mean for CHANCE (44.6) compared with 44.0 in the Prototype Exercise. Since the items in this scale were not modified to any extent compared with the other two scales following the initial research the similarity of mean scores is again supportive of reliability. If dependency decreases with age then the slightly younger pupils in the latest research would indeed be expected to score slightly higher on this scale, as in fact was the case.

5.6.4 Review of the INTERNAL, POWERFUL OTHERS and CHANCE Scales

5.6.4.1 The previous sections have provided evidence to support the claim that scales have been developed which are able to measure, with consistency, sets of personal characteristics related to health. Table 12 also shows the extent to which corresponding general and specific constructs correlate with each other within the three scales being developed.

5.6.4.2 The table below indicates the correlation between the valuation of the corresponding general and specific constructs. The strength of response in valuing fitness

CONSTRUCT	FIT-NESS	APPEAR-ANCE	ACCEPT-ANCE	AGREE-ING	WORRIES	CONTENT-MENT
Correlation of general to specific evaluation of them	.536 ***	.411 ***	-.003 **	.483 ***	.309 **	.312 ***

therefore correlated at .536 with a similar strength of response in valuing a fitness test for a tutor group competition. This supports the notion of a generalised attitude towards these constructs in addition to the locus of control scales being developed in this programme.

** $P < .01$

*** $P < .001$

5.6.4.3 Of particular interest is the association between the three locus of control scales. It has been argued that the POWERFUL OTHERS and CHANCE scales are in fact sub categories of an external tendency or trait. Table 13 illustrates the correlations between the three scales based upon the general and specific constructs incorporated in this research programme.

A strong association between the POWERFUL OTHERS and CHANCE scales is clearly evident in 10 out of 12 positive correlations being established. When relating the INTERNAL scale with the other scales only 5 positive correlations out of 12 in each instance can be established. This would give support to the notion of an external tendency being a clear variable from which the CHANCE and POWERFUL OTHERS scales emanate.

5.6.4.4 Table 2 further supports the findings of 5.6.4.3 by showing that class and gender groups scoring highly on POWERFUL OTHERS score correspondingly highly on CHANCE. Out of the 12 groupings identified only group C male : female CHANCE scores contradict the consistency of association between the scales in question.

5.6.4.5 Table 12 shows the relationship WITHIN the locus of control scales by comparing the constructs in their general and specific contexts. The positive associations established demonstrate consistency in pupils' responses but not to such a level that one context would be highly predictive from the

other. The three negative correlations also indicate that these items require re-wording to improve the reliability of the scales.

5.6.5 The RISK TAKING Scale

Questions 53 and 58 refer. Correlations are shown in Table 14 whilst item and scale means are shown in Tables 1 and 2.

Results

5.6.5.1 A positive correlation of .575 ($P < .01$) was established between the two items. Table 14.

5.6.5.2 Group A (higher ability) scored higher than group B (lower ability) with both items. Table 1.

5.6.5.3 Males scored higher than females with both items. Table 1. This result (as also 5.6.5.2 above) was reflected in the scale means. Table 2.

5.6.5.4 The highest scale mean was recorded by group D males (10.8). Table 2.

5.6.5.5 The correlation established between the RISK TAKING scale and three locus scales was as follows:

INTERNAL (-.226*)
POWERFUL OTHERS (.045)
CHANCE (.036)

* $P < .05$

Discussion

5.6.5.6 The positive correlation established between the items would appear to represent a common attitude towards the valuation of risk-taking behaviour by pupils. This was a considerable improvement on the findings of the previous research phase.

5.6.5.7 The academic ability variable reversed the result of the Prototype Exercise in which low ability was associated positively with a higher rating of risk taking. This differential may well be due to the re-wording of the items and clearly requires further research.

5.6.5.8 The higher scores attributed to males, as compared with females, in this exercise reinforces a similar result in the prototype exercise. Such an outcome supports the notion of male machismo with its origin in primary socialisation. Male stereotyping, sex roles and normative behaviour is associated with the creation of expectations to which young males may feel they have to aspire. Supporting the idea, both verbally and actively, of risk taking would be one way for young male adults to fulfil such expectations.

5.6.5.9 The finding in 5.6.5.5. above demonstrates a significant negative association between internality and a positive evaluation of risk taking behaviour. This reinforces the findings of other researchers (e.g. Phares 1976) and supports the reliability of the scales developed in this programme.

5.6.6 The SUSCEPTIBILITY Scale

Questions 49, 52, 56 and 60 refer. Correlations are shown in Table 15 whilst item and scale means are illustrated in Tables 1 and 2.

Results

5.6.6.1 A positive correlation ($P < .05$) was established between items 52 and 56. TABLE 15.

5.6.6.2 The remaining correlations were 4 positive and 1 negative (not significant).

5.6.6.3 Question 52 had the highest item mean (6.0) of the four items. TABLE 1.

5.6.6.4 Group A had a higher scale mean than group B (22.3 - 20.9). Groups C and D showed very similar scale means (20.9 - 21.1). TABLE 2.

5.6.6.5 Females had a slightly higher scale mean than males (21.7 - 20.7). TABLE 2.

5.6.6.6 Group D males scored particularly low on this scale (18.0) TABLE 2.

5.6.6.7 The correlation established between this scale and the three locus scales was as follows:
INTERNAL (.268**) CHANCE (-.288**) POWERFUL OTHERS (.165)

** $p < .01$

Discussion

5.6.6.8 Correlations tended to be somewhat lower in this research than for the same items in the earlier phase. Whether this reflects a lower awareness of the association between present behaviour and health status is unclear. The new item (question 60) obtained less favourable correlations with existing items than the original one which, therefore, requires its retention to be re-considered.

5.6.6.9 The higher scale mean of group A compared with group B reinforced a similar finding in the Prototype Exercise. The outcome was consistent for males, females and total groups.

5.6.6.10 Females scored higher than males both in this project and in the Prototype Exercise. Both this finding and that of 5.6.6.9 gives consistency and support for the reliability of this scale.

5.6.6.11 Group D males not only scored the lowest scale mean (18.0) but also the highest RISK TAKING score (10.8) as shown in Table 2. This supports the validity of the scales whilst also demonstrating that a high acceptance of personal risk taking is held in conjunction with a low acknowledgement of any susceptibility to ill health as a result of personal behaviour. Taken together one attitude justifies the other and its resultant behaviour by disclaiming any likely disadvantage to its 'owner'.

5.6.6.12 The significant positive correlation with internality (see 5.6.6.7) demonstrates consistency insofar as a tendency

towards internality would incorporate by definition a desire to maintain control over factors which are acknowledged as having a cause and effect relationship. The SUSCEPTIBILITY scale items were designed in such a way as to test acceptance of such an association between present behaviour and future effects on oneself. Equally the significant negative association with CHANCE confirms the acceptance of cause and effect variables and further supports the scale's reliability.

5.6.7 The NEWNESS Scale

Questions 55 and 59 refer. Correlations are shown in Table 16 with item and scale means in Tables 1 and 2.

Results

5.6.7.1 A positive correlation of .164 was established between the two items. Table 16.

5.6.7.2 The two items had very similar means (5.2 and 5.3 respectively). Table 1.

5.6.7.3 Groups showed very similar scale means. Table 2.

5.6.7.4 Within-group differences were clearly shown. Group A males scored much lower than group B males (8.5 - 10.5). The remaining sub groups had similar scale means to each other.

5.6.7.5 Females overall had a slightly higher scale mean than males.

5.6.7.6 The correlations established between this scale and the three locus scales were as follows:
INTERNAL (.069) CHANCE (-.106) POWERFUL OTHERS (-.104).

Discussion

5.6.7.7 The two items involved had been partially re-worded from two of the three items in the previous research exercise. An improved correlation (from .01 to .16) is encouraging but leaves room for further progress.

5.6.7.8 Whereas the higher ability group scored higher than the lower ability group in the Prototype Exercise, the association

applied only to females in this phase. Group A males scored much lower than their counterparts in group B. This low response of group A males applied particularly to question 59 where the sub group had an item mean of 3.8 compared with a mean of 5.0 for all males and 5.3 for all 91 pupils in the research. This question concerned the rating of new experiences as exciting. The rejection of this notion by group A males may reflect the satisfaction obtained from academic achievement or its associated status. Since the group A females did not move in a similar direction the next phase of the research will be interesting in identifying any new direction being taken.

5.6.7.9 The lack of a significant correlation between the NEWNESS and INTERNAL scales may well reflect upon the wording of the two items representing the former scale. Question 59 relates to an evaluation of new experiences whereas question 55 may be perceived as focussing upon personal decision making rather than a new event or object. The negative association with the other two locus scales showed consistency which may again become significant with the re-wording of item 55.

5.6.8 The GOOD HEALTH Scale

Questions 50, 51, 54 and 57 refer. Correlations are shown in Table 17 with item and scale means in Tables 1 and 2.

Results

5.6.8.1 The four items all correlated positively with each other ranging from .102 to .356. TABLE 17.

5.6.8.2 Question 54 showed the highest correlations with its fellow items. TABLE 1.

5.6.8.3 Question 50 had the highest item mean (6.3) in this scale. TABLE 1.

5.6.8.4 Group A scored a higher scale mean (25.5) than group B (23.1) TABLE 2.

5.6.8.5 Group D males had a particularly low scale mean (18.5). TABLE 2.

5.6.8.6 Females overall scored slightly higher than males (23.8 - 22.7). TABLE 2.

5.6.8.7 The correlations established between this scale and the three locus scales were as follows:
INTERNAL (.165) CHANCE (-.311**) POWERFUL OTHERS (-.057).

** $P < .01$

Discussion

5.6.8.8 The scale in general improved its number of positive correlations. Two items were retained and kept their level of association. The new question 51 improved upon its replacement item and should, therefore, remain. The other new item (question 50) did not improve upon one of the discarded items and will thus be replaced by the original item in the next phase.

5.6.8.9 The higher academic group (A) scored consistently above group B as a whole and with each gender sub group. Since the difference was only marginal any claims in this respect should remain until further research has been undertaken.

5.6.8.10 Whereas males in total scored higher than females in the Prototype Exercise this was not replicated in this exercise. This was predominantly due to group D males who scored very low on this scale. (see 5.6.8.5). This group scored highest on the valuation of risk-taking behaviour and lowest on accepting the relationship between present actions and hazard to health (see 5.6.6.11), as shown in table 2. This would appear to support the contention of a specific correlation between the RISK TAKING, SUSCEPTIBILITY, NEWNESS and GOOD HEALTH scales.

5.6.8.11 A clearly positive association was established between the GOOD HEALTH and INTERNAL scales (see 5.6.8.7) which almost reached a significant level. This suggests that the valuation of good health tends to be higher amongst those

pupils with a greater degree of internality than others. The relatively high mean scores for the four GOOD HEALTH scale items (6.3, 5.4, 6.1 and 5.5) is encouraging in its general valuation of the construct but results in a lack of discrimination between pupils. A modification to wording may be able to retain the valuation component whilst developing the discrimination between categories of pupils.

5.6.8.12 The significant negative correlation with CHANCE further supports the notion that a valuation of health is accompanied by a corresponding acceptance of personal influence (and control), as opposed to external factors, on health status.

5.6.9 The FITNESS Construct

The general FITNESS construct is represented by questions 1, 7 and 13 and the specific FITNESS construct by questions 19, 20 and 21. The valuation of each construct is represented by questions 37 and 43 respectively.

Correlations are shown in Tables 18 and 19 and individual item means in Table 1.

General Construct

5.6.9.1 A significant* positive correlation was established between the 'chance' item (question 1) and the 'powerful others' item (question 13). TABLE 18.

5.6.9.2 The 'internal' item for this construct (question 7) showed a low negative correlation with the 'chance' item and a low positive correlation with the 'powerful others' item.

5.6.9.3 The valuation of this construct (question 37) correlated positively with the internal item but negatively with the other two items.

Specific Construct

5.6.9.4 The 'internal' item (question 20) correlated negatively (at a significant level) with both the 'chance' item (question 19) and the 'powerful others' item (question 21). TABLE 19.

* r = .206 and above

5.6.9.5 The 'chance' and 'powerful others' items showed a positive correlation (significant) with each other.

5.6.9.6 Valuation of this construct was positively associated (significantly) with the 'internal' item.

5.6.9.7 Valuation of this construct correlated negatively with both the 'chance' and 'powerful others' items.

Discussion

5.6.9.8 The above results consistently show a close association between an external trait as represented by the 'chance' and 'powerful others' items in both a general and specific fitness context (see 5.6.9.1, 5.6.9.4, 5.6.9.5).

5.6.9.9 This consistency also supports the notion of a common locus of control attitude towards fitness irrespective of the internality or externality of each person's locus. Therefore, a pupil feeling that fitness in general is mainly a matter of luck would do little to prepare himself for a fitness test in school, preferring to let things 'run their course' believing that there is little one could do to influence outcome.

5.6.9.10 Table 12 illustrates the relationship between the general and specific FITNESS constructs based upon the 'internal', 'powerful others' and 'chance' scales. The correlations provide clear evidence of consistency in the pupils' attitude towards fitness. It also supports the claim that pupils answered according to their true beliefs rather than through any desire to provide socially approved responses.

5.6.9.11 The valuation of the constructs demonstrated consistency both in the general and specific contexts. A tendency towards internality is associated with a higher valuation than where an external philosophy exists. This may represent a defence mechanism devaluing something not considered to be within personal control and a means, therefore, of avoiding any anxiety over lack of personal progress or achievement.

5.6.9.12 The inclusion of all three questions (scales) for the FITNESS construct is justified by the significant positive and negative correlations established between questions 19, 20 and 21 (see 5.6.9.4 and 5.6.9.5 above). The situation regarding the general FITNESS construct showed a similar pattern but with lower correlations (5.6.9.2 above), suggesting that question 7 (internal) could be improved by re-wording.

5.6.10 The APPEARANCE Construct

The general APPEARANCE construct is represented by questions 2, 8 and 14 and the specific APPEARANCE construct by questions 22, 23 and 24. The valuation of each construct is represented by questions 38 and 44 respectively.

Correlations are shown in Tables 20 and 21 and individual item means in Table 1.

General Construct

5.6.10.1 The 'internal' item (question 2) showed a negative correlation with the 'chance' item (question 14) but a slightly positive correlation (.096) with the 'powerful others' item (question 8). TABLE 20.

5.6.10.2 The 'chance' item showed negative correlations (neither significant) with the other items.

5.6.10.3 All three scale items were positvely associated with the valuation item (question 38). Though no correlations were significant the 'internal' item had the highest level (.189).

Specific Construct

5.6.10.4 Question 23 (internal) was negatively associated with question 22 (powerful others) at a significant level ($P < .001$) Table 21.

5.6.10.5 The 'chance' item (question 24) had a positive correlation with the 'internal' item and slightly negative correlation with the 'powerful others' item.

5.6.10.6 The valuation of the specific construct was positively associated with the 'internal' and 'powerful others' items and negatively with the 'chance' item. Table 21.

Discussion

5.6.10.7 The items in the general APPEARANCE construct do not appear to discriminate very precisely with regard to locus of control. The low correlations suggest that re-wording may improve this particular construct.

5.6.10.8 With the specific construct improved discrimination was apparent between the 'internal' and 'powerful others' scales. Whereas these two scales correlated positively in the Prototype Exercise (see 4.7.10.4) the subsequent re-wording has clearly had an impact in helping to polarise the division between the alternative scale items representing the specific APPEARANCE construct.

5.6.10.9 The correlations between general and specific items on each scale were very good (Table 12) for internality and chance but neutral for the 'powerful others' scale. This demonstrates a reasonable level of consistency for the former two scales and further support for the scales' existence as entities in their own right.

5.6.10.10 In considering the relationship between the 'internal', 'chance' and 'powerful others' scale items the findings are inconclusive (Table 13). With the general construct 'internality' and 'powerful others' scales were closest

whilst 'internality' and 'chance' were closest for the specific construct. This result does not support the claim of 'chance' and 'powerful others' scales being sub categories of an externality trait. The finding may of course reflect upon the design of questions rather than upon the proposal's validity.

5.6.11 The ACCEPTANCE BY FRIENDS Construct

The general ACCEPTANCE construct is represented by questions 3, 9 and 15 and the specific ACCEPTANCE construct by questions 25, 26 and 27. The valuation of each construct is represented by questions 39 and 45 respectively.

Correlations are shown in Tables 22 and 23 and individual item means in Table 1.

General construct

5.6.11.1 The 'internal' item (question 15) showed a negative correlation (not significant) with both the 'chance' item (question 9) and the 'powerful others' item (question 3). Table 22.

5.6.11.2 A significant ($P < .01$) positive correlation was established between the 'chance' and 'powerful others' items.

5.6.11.3 Valuation of the construct was slightly correlated in a positive direction with 'chance' and 'powerful others' and slightly in a negative direction with 'internality'.

Specific construct

5.6.11.4 A significant ($P < .001$) negative correlation was established between the 'internal' item (question 25) and the 'powerful others' item (question 26). Table 23.

5.6.11.5 A negative correlation was shown between the 'internal' and 'chance' item (question 27).

5.6.11.6 A positive association was established between the 'chance' and 'powerful others' items.

5.6.11.7 Valuation of the construct correlated negatively ($P < .001$) with the 'internal' item but positively with 'powerful others' ($P < .001$) and 'chance' (not significant).

Discussion

5.6.11.8 The results support the case for 'chance' and 'powerful others' scales being closely associated as an external trait in people. This is illustrated in Table 13 which shows these two scales always having the most positive correlation with regard to this construct, both in a general and specific context.

5.6.11.9 The results also suggest that the re-wording of questions has sharpened the differences between options and enabled the various locus of control attitudes to be identified.

5.6.11.10 Table 12 shows rather low correlations between the attitude towards the construct in its general and specific context. This may mean that the particular circumstances will dictate behaviour where peer group influences exist rather than a consistent locus philosophy always being applied to 'acceptance by friends' irrespective of the context. Whereas the general construct examined awareness of the process of 'acceptance by friends' the specific construct probed pupil motivation for acceptance. This important difference would help explain the striking correlations

within constructs and poor association between corresponding locus questions in the general and specific context.

5.6.11.11 The relationship of valuation to scales is most interesting (Tables 22 and 23). A tendency towards dependency on powerful others had the most positive correlation with valuation of ACCEPTANCE BY FRIENDS in both a general and specific context. The other two scales had low positive correlations in the general context whilst internality showed a significant ($P < .01$) negative association with valuation of the specific construct.

5.6.11.12 The results appear to indicate that acceptance by friends is more valued by those who depend upon them whereas more independent pupils do not value the construct so highly. In each instance the act of rationalisation may be in operation retrospectively upon locus of control or it may be that the locus of control belief determines the valuation of the construct in the initial valuation process.

5.6.11.13 The high overall mean for question 25 appears to suggest a tendency towards internality by many pupils.

Question 27 (Table 1) however still reveals a reasonably high level of dependence upon chance by many pupils to help them out of a situation requiring personal assertion and confidence. Therefore, it would appear that further pastoral help would be most useful in supporting those wishing to resist peer group pressure both in this and other social encounters.

5.6.12 The AGREEING WITH FRIENDS Construct

The general AGREEING construct is represented by questions 4, 10 and 16 and the specific AGREEING construct by questions 28, 29 and 30. The valuation of each construct is represented by questions 40 and 46 respectively. Correlations are shown in Tables 24 and 25 and individual item means in Table 1.

General construct

5.6.12.1 All three items correlated positively with each other. Table 24.

5.6.12.2 The 'internal' item (question 10) showed significant ($P < .01$) correlations with the other two items. The 'chance' and 'powerful others' items though correlating positively did not attain a level of significance.

5.6.12.3 The valuation of this construct was associated negatively with 'chance' but positively with 'internality' (not significant) and 'powerful others' ($P < .01$). Table 24.

Specific construct

5.6.12.4 The 'internal' item (question 28) correlated negatively ($P < .01$) with both the 'chance' item (question 30) and the 'powerful others' items (question 29). Table 25.

5.6.12.5 A significant ($P < .01$) positive correlation was established between the 'chance' and 'powerful others' items.

5.6.12.6 Valuation of the construct was significantly associated ($P < .01$) with both 'chance' and 'powerful others' items in a positive direction. Table 25.

Discussion

5.6.12.7 A considerable degree of consistency is demonstrated in these findings. With both the general and specific AGREEING construct the valuation is predominantly associated with the 'powerful others' scale. This scale also correlates positively with 'chance' in both contexts. In the specific construct the negative correlation of the two scales with internality is at a high degree of significance very similar to their own level of positive correlation.

5.6.12.8 The association of valuation with the 'powerful others' items replicates the situation with regard to the ACCEPTANCE BY FRIENDS construct (see 5.6.11.11). Again it poses the question of locus of control being an antecedent or consequence of valuation. Consistency is however clearly shown in the analysis both within and between these 'social' constructs.

5.6.13 The SORTING OUT WORRIES Construct

The general WORRIES construct is represented by questions 5, 11 and 17 and the specific WORRIES construct by questions 31, 32 and 33. The valuation of each construct is represented by questions 41 and 47 respectively.

Correlations are shown in Tables 26/27 and individual item means in Table 1.

General construct

5.6.13.1 The 'chance' item (question 17) showed a positive correlation with 'powerful others' (question 11) and with 'internality' (question 5). TABLE 26.

5.6.13.2 The 'internal' item correlated negatively with the 'powerful others' item.

5.6.13.3 The valuation of this item (question 41) showed a negative association (not significant) with all three scales. TABLE 26.

Specific construct

5.6.13.4 A significant negative correlation was established between the 'internal' item (question 33) and the 'powerful others' item (question 31).

5.6.13.5 The 'internal' item had a very low positive correlation with the 'chance' item.

5.6.13.6 The 'chance' item showed a good positive correlation (almost significant) with the 'powerful others' item.

5.6.13.7 Valuation was significantly ($P < .001$) associated in a positive direction with the 'internal' item but almost neutrally with 'chance' (-.056) and 'powerful others' (.060).

Discussion

5.6.13.8 'Internality' was consistently associated negatively with 'powerful others' in both contexts (5.6.13.2 and 5.6.13.4) indicating that the questions are now worded in such a way as to identify the respective viewpoints. In the Prototype Exercise the divisions were not so apparent since the questions did not adequately sharpen the relative locus of control attitudes.

5.6.13.9 The positive correlation between 'internality' and 'chance' in the general construct is interesting in suggesting that even people accepting an internal philosophy respect the effect of unforeseen or chance events beyond their immediate control.

5.6.13.10 Only in the specific context was the valuation factor associated positively with any scale (internality at $P<.001$ in this instance). Since 'chance' was negatively associated with valuation in both constructs it may suggest a conscious devaluing of the construct as a result of perceived inability to retain personal control or obtain help from others.

5.6.13.11 Table 12 demonstrates a good degree of consistency between the WORRIES construct both in a general and specific

context. All three scales show a positive correlation with the 'powerful others' scale being at a significant level.

5.6.13.12 The item mean scores for the 'internal' and 'powerful others' scales were quite low in the general context (table 1). Chance, however, scored much higher (item 17) suggesting a strategy of 'letting problems run their course' being quite popular with pupils. Whereas the scores for groups C and D (mixed ability) were similar the difference between groups A and B was quite marked (Table 1).

5.6.14 The CONTENTMENT Construct

The general construct is represented by questions 6, 12 and 18 and the specific construct by questions 34, 35 and 36. The valuation of these constructs is represented by questions 42 and 48 respectively. Correlations are shown in Tables 28/29 and individual item means in Table 1.

General Construct

5.6.14.1 All three items correlated positively with each other but not at a significant level. TABLE 28.

5.6.14.2 Valuation of this construct showed a low positive correlation with the 'powerful others' item (question 6) but low negative correlations with the other items.

Specific Construct

5.6.14.3 The 'powerful others' item showed a low positive correlation with 'chance' and 'internality'. TABLE 29

5.6.14.4 The 'chance' item was negatively associated with the 'powerful others' item (not significant).

5.6.14.5 Valuation was shown to correlate positively (not significant) with 'chance' and negatively with the other items (not significant).

Discussion

5.6.14.6 These findings are characterised by a lack of significant correlations in either direction. This would suggest a low level of pupil motivation or perhaps the necessity to re-word questions to discriminate more precisely between various attitudes related to the construct of CONTENTMENT.

5.6.14.7 Some degree of consistency was demonstrated between the general and specific context of this construct. (Table 12). All three locus of control scales show a positive association between the corresponding scale item with 'internality' being at a significant ($P < .05$) level.

5.6.14.8 Within the limitations of these results (5.6.14.6 above) it was shown (Table 13) that the 'chance' and 'powerful others' items established the closest association. Though only marginally so, it does continue the pattern of other correlations in the Table. (see 5.6.4.3)

5.6.15 The Valuation of Constructs

Questions 37 -48 refer. Individual item means are shown in Table 1 whilst correlations with appropriate scales are shown incidentally in Tables 18 - 29 but concisely in Table 30.

Results

5.6.15.1 The tendency towards 'internality' is positively associated with a corresponding valuation of the construct in 6 out of 12 instances. TABLE 30.

5.6.15.2 The tendency towards a 'chance' philosophy is positively associated with a valuation of the construct in 5 out of 12 instances.

5.6.15.3 The tendency towards a 'powerful others' philosophy is associated positively with a valuation of the construct in 8 out of 12 instances.

5.6.15.4 When comparing the valuation of each construct in a general and specific context the following correlations were established:

FITNESS	APPEARANCE	ACCEPTANCE BY FRIENDS	AGREEING WITH FRIENDS	WORRIES	CONTENTMENT
.536***	.411***	-.003	.483***	.309**	.312***

** P < .01

*** P < .001

A tendency to value appearance in general was, for instance, associated with a valuation of 'looking good when being interviewed' with a positive correlation of .411 ($P < .001$).

5.6.15.5 Of the 12 items 8 had a mean score of 5.6 or above. Of the remainder 3 had means of 4.0 or above.

5.6.15.6 The highest mean score (6.4) was attributed to item 42 (valuation of contentment).

5.6.15.7 The lowest mean score (2.5) was attributed to item 45 (valuation of specific acceptance by friends).

Discussion

5.6.15.8 At first glance it appears surprising that more positive correlations were not established between individual items and valuation of the construct. However, the pupils were asked to evaluate the individual constructs presented (as shown by item means in Table 30) rather than justify their locus of control by a positive appraisal simultaneously of the construct.

5.6.15.9 The variation of correlations in Table 30 nonetheless is most interesting. With regard to FITNESS an 'internal' tendency is accompanied by a high valuation of the construct, particularly in a specific context. The APPEARANCE construct shows that both 'internality' and 'powerful others' associate quite well with its valuation. Both the 'ACCEPTANCE BY FRIENDS' and 'AGREEING WITH FRIENDS' constructs are noticeable for the high association between

those pupils showing a tendency towards a 'POWERFUL OTHERS' philosophy and a high valuation of the constructs. This would seem to be related to the 'social' nature of both constructs and the 'powerful others' scale.

The specific SORTING OUT WORRIES construct is highly associated with internality in a positive direction yet in the general context a negative correlation is shown. This is all the more surprising since the two valuation items for this construct are associated at .309 ($P < .01$) in result 5.6.15.4 above.

The CONTENTMENT construct shows very little of significance with regard to valuation and would appear to benefit from modification (see 5.6.14.6).

5.6.15.10 Although the relationship between the three locus scales and valuation of constructs is variable the association between the valuation of the same construct in a general and specific context is highly consistent (5.6.15.4 above). This suggests that pupils have not only given valid responses in the research but recognise the relationship between context and apply similar criteria to their evaluation in each setting.

5.6.15.11 The level of valuation of the constructs involved in this research exercise (see 5.6.15.5) suggests that the constructs chosen were relevant to young adults. A low level of valuation would not only have diminished motivation but also have affected the validity of the locus measures recorded.

5.6.15.12 Though in general 'acceptance by friends' was highly valued (mean of 5.9 - item 39) the specific context (drinking alcohol if my friends want me to) received the lowest valuation (2.5). This may reflect poor design of the specific construct or the fact that valuation of this construct very much depends upon circumstances. Certainly a low correlation was established between this construct in the general and specific context (-.003, see 5.6.15.4 above). An alternative specific aspect of the 'ACCEPTANCE BY FRIENDS' construct would appear desirable for the next phase of the research as a result of this finding.

5.6.16 Conceptualisation of Health

This category is represented by questions 61 to 74. Correlations are shown in Table 31 and item means in Table 1.

Results

5.6.16.1 Item 64 ("Feeling Good") showed the highest mean score (6.4).

5.6.16.2 Item 68 ("Doing what you are told") had the lowest mean score (3.7).

5.6.16.3 Of the 91 correlations between the 14 items 88 were found to be positive (58 significant) and 3 negative.

5.6.16.4 Item 69 ("Enjoying life") was most successful in having 13 positive correlations (all significant) with other items.

5.6.16.5 Item 65 ("Not having an illness") was least successful, having 'only' 12 positive correlations (4 significant) and 1 negative correlation.

5.6.16.6 Items 62, 66 and 70 represented the social dimension of health. In each case group B (lower ability) had higher mean scores than group A (higher ability). A 't' test proved these findings significant at $P < .01$ for items 62 and 66 and $P < .05$ for item 70. This trend was found to be consistent within gender groups also when comparing group A with group B.

5.6.16.7 The mixed ability groups (C and D) showed no such consistency in respect of items 62, 66 and 70 (group C scoring higher on 2 of the 3 items).

5.6.16.8 Item 71 ("Being good at things") may be defined as an achievement perspective. The item correlated positively with each of the 'social' items 62, 66 and 70. (.406***, .382*** and .544*** respectively).

Group B again scored higher than group A with respect to item 71 both as a full group and when sub divided by gender.

5.6.16.9 Group D had a higher mean score than group C on item 71 again demonstrating further lack of consistency on the social dimension of health compared with the contrast between groups A and B.

5.6.16.10 The 'prescriptive' items (63 and 68) had the lowest mean scores (4.4 and 3.7). No clear group factor was apparent with these two items.

5.6.16.11 Items 64, 67, 69 and 73 may be defined as representing a positive dimension of mental health. All correlated well with each other (ranging from .161 to .533). The item means were high (being 6.1, 5.4, 5.9 and 5.8). There were no clear differences between any of the four groups with respect to the results shown for these items.

*** P = $< .001$

5.6.16.12 Item 72 ("not having any worries") may be viewed as a somewhat negative dimension of mental health.

The correlation of item 72 with the positive mental health items was as follows:

Item 62 (.189), item 67 (.422), item 69 (.333) item 73 (.642).

5.6.16.13 Items 61 ("Being fit") and 65 ("Not having illness") had good item means (6.0 in each instance). The high scores were distributed evenly between all four groups.

Discussion

5.6.16.14 The low mean scores attributed to items 63 and 68 (see 5.6.16.10) demonstrate a rejection by all groups of the prescriptive concept of health as with the earlier research (see 4.7.8.4). No doubt this will be associated with the questionning of other life issues by younger people to-day rather than passive acceptance of 'self evident' truths. This would appear quite plausible and illustrate that health ideology is merely one manifestation of a general philosophy of life.

5.6.16.15 Since nine of the fourteen items showed a mean of 5.0 and above this may suggest a response set tendency amongst pupils. However, it may indicate an acknowledgement of the many facets of health and consequently account for the high rate of agreement.

5.6.16.16 The positive mental health findings (5.6.16.11) are extremely interesting insofar as they demonstrate that the

quality of life is an important consideration of health conceptualisation. The fact that this outcome represented the views of all four groups implies a general acceptance of this dimension and perhaps a rethinking of life's priorities. The Prototype Exercise also showed a similar result (see 4.6.8.5).

5.6.16.17 The mental health concept described above has not replaced the medical model of health but been added to it since the items representing the medical model showed high mean scores (see 5.6.16.13). This finding is again satisfying in suggesting that a more sophisticated perception of health is held by these pupils than children of a former generation. Again this finding reinforces that of the former research phase (see 4.6.8.3).

5.6.16.18 The low mean for item 72 compared with items 64, 67, 69 and 73 (see 5.6.16.11 and 5.6.16.12 above) indicates a positive outlook on mental health rather than a negative one being held by young people. Whether or not the respective concepts are more highly valued than others is not clear from the questions posed. The implication exists for such a value judgement but the evidence reflects more upon conceptualisation rather than valuation.

5.6.16.19 Of special interest in this analysis is the outcome related to the social dimension of health (see 5.6.16.6 - 5.6.16.9 above). There is no doubt that a significant discrepancy in conceptualisation exists between those pupils deemed of higher and lower ability.

The findings replicate those of the Prototype Exercise (see 4.7.8.6) in demonstrating a different perception of the social aspects of health. Perhaps these responses also imply value judgement variation amongst the respective academic groups even though the questions focused upon perception. The act of identifying personal concepts may of necessity arise from a sub-conscious valuation process. Whether or not the valuation factor is accepted the differential remains between group A and B in this research exercise, as it did between groups A and C in the initial programme. The validity of each school's academic rating system may, of course, be questioned. Perhaps the more important factor, however, is not the issue of academic ability but the experience of being labelled and categorised, of being accorded status (or not), of being generally treated as though they were of higher ability and of being the recipients of academic success (or not). The effect of such school experience could in itself be the major precursor of the significant variation in health conceptualisation established again in this research programme. Such an emphasis upon 'experience' in determining values and priorities accords with the phenomenological theory (Schutz 1972) and the humanistic psychology of Carl Rogers (1961). Further research into this specific aspect of the programme would seem appropriate in confirming or disproving the proposal made in the light of the present findings.

5.6.17 Health Conceptualisation and Locus of Control

A further area for investigation is the association between an individual's perception of health and his (her) health locus of control. This may be studied by comparing scores on the category of questions 61 - 74 with the same person's scores on the "internal", "chance", and "powerful others" scales.

The fourteen concepts in questions 61 - 74 may be categorised under a number of dimension headings as follows:

a) medical (questions 61 and 65 refer)
b) prescriptive (questions 63, 68 and 74 refer)
c) social (questions 62, 66 and 70 refer)
d) achievement (question 71 refers)
e) positive mental (questions 64, 67, 69 and 73 refer)
f) negative mental (question 72 refers)

Table 32 illustrates the correlations established between each of the above six categories and the three health locus of control scales.

Results

5.6.17.1 The MEDICAL concept correlated positively ($P < .001$) with internality but negatively with chance. Its association with powerful others was very slightly positive.

5.6.17.2 The PRESCRIPTIVE concept correlated positively with internality ($P < .001$) and the "powerful others" scale but slightly negatively with chance.

5.6.17.3 The SOCIAL concept correlated positively with chance ($P < .05$), powerful others ($P < .001$) and slightly positively with internality.

5.6.17.4 The ACHIEVEMENT concept correlated positively, without significance, with all three scales.

5.6.17.5 The POSITIVE MENTAL concept correlated positively with internality ($P < .05$) and slightly positively with the other two scales.

5.6.17.6 The NEGATIVE MENTAL concept correlated positively with internality and powerful others but negatively with chance (none significant).

5.6.17.7 The POSITIVE and NEGATIVE MENTAL concepts showed a positive correlation ($P < .001$) with each other.

5.6.17.8 All six categories of concepts correlated positively with the 'internal' scale (3 significant).

5.6.17.9 All six concepts correlated positively with the 'powerful others' scale (1 significant).

5.6.17.10 Three concepts correlated positively and three negatively with the 'chance' scale.

Discussion

5.6.17.11 The significant positive correlations shown for the MEDICAL and PRESCRIPTIVE concepts with internality confirm a consistent relationship between the tendencies. In particular the prescriptive items (63, 68 and 74) and internality would all appear to incorporate characteristics such as self-discipline and reliance.

5.6.17.12 The positive correlation (almost significant) between the PRESCRIPTIVE concept and 'powerful others' scale may well reflect the acceptance of regulations imposed by significant others in a position of influence or authority. If so, consistency is again demonstrated in the data collected.

5.6.17.13 The SOCIAL concept established significant positive correlations with the 'chance' and 'powerful others' scales. Both scales may be seen as external to the individual and, therefore, be logically, and in this instance statistically, associated with the social dimension.

5.6.17.14 The ACHIEVEMENT concept followed a similar pattern to that of the SOCIAL concept but not so intensely. Though the highest correlations were also with the 'chance' and 'powerful others' scales the differential with the 'internal' scale correlation was lower than in the case of the SOCIAL concept.

5.6.17.15 Both the POSTIVE and NEGATIVE MENTAL concepts followed a similar pattern of association with all the locus scales. Each correlated most positively with internality and least well with chance. In confirmation of this close association between the two MENTAL concepts a correlation of .569 ($p < .001$) was established.

5.6.17.16 The significant correlation between the POSITIVE MENTAL CONCEPT and INTERNALITY is rather suprising insofar as lower ability children, having less internal tendencies (5.6.1.15), might have been expected to have equally

perceived health in these terms as those of higher ability. Perhaps the latter group are more sensitive to the factors in question (items 64, 67, 69 and 73) as a result of their academic status. The academic pressures may make such pupils even more aware of the need to 'enjoy life', 'feel good', 'have a good time' and 'be happy'. Further research in this area would again have much to commend an early initiative being taken.

5.6.17.17 There is little doubt that pupils' perception of health follows a very similar pattern to their locus of control ideology. Far from being suprising this outcome is reassuring since it reinforces the notion that they (the pupils) are seeking to understand and interpret their world in a consistent manner irrespective of any value judgement made of such perceptions by 'outsiders'. The finding also confirms the validity of this research exercise in being able to identify beliefs and traits which exist in the minds of the young people concerned.

5.6.18 The Concurrent Validity Exercise

The validation of the amended scales (Appendix I) was considered to be both desirable and necessary. Whereas a construct validity component had been incorporated into the Prototype Exercise a test of the instrument's concurrent validity was selected as an alternative, and complementary, approach in this phase of the research.

The comparative measure chosen was the Nowicki-Strickland Children's Locus of Control Scale (Appendix IV). This has been described earlier (5.3.4) in detail and contains a series of forty items requiring a yes/no response from children. The scale has been extensively tested in the United States with adolescents and is accepted as an authoritative instrument in this field.

A small number of word amendments were made to the Nowicki-Strickland scale to ensure comprehension. Otherwise the scale was used in its original form in school 2 for groups C and D. This was due to the fact that more time was available in this school for such a follow-up enquiry than in school 1. Altogether 44 pupils took part in this validation exercise which provided a reasonable sample for examining the association existing between the two instruments.

Findings

5.6.18.1 The table below shows that a consistent series of correlations was found between all groups tested as regards the externality scores on the new Health Locus of Control Scales and the Nowicki-Strickland Childrens' Locus of Control Scale. The correlations were established at a good level by

both groups of pupils with the two classifications of externality in the new scales (i.e. 'Chance' and 'Powerful Others'). It should be noted that since the Nowicki-Strickland Scale was designed and scored for externality the comparison with the new scales was made accordingly.

Comparison of the Nowicki-Strickland Scale with 'Powerful Others' and 'Chance' sub scales of the Health Locus of Control Scale.

	With the "Powerful Others" scale	With the "Chance" scale	With combined "Powerful Others" and "Chance" scales
Group C N = 23	.510	.351	.439
Group D N = 21	.314	.414	.463
TOTAL N = 44	.409	.382	.459

In each case a Spearman's Rank Order Correlation Coefficient was calculated to give the associations shown above.

Discussion

5.6.18.2 Earlier (section 5.3.4) it was pointed out that the concurrent validity exercise was designed in the hope of establishing a reasonable correlation with another established scale. Though such a finding would give confirmation to the new scale's validity it could be regarded as superfluous if the correlation was so high as to be highly predictable from use of the existing measure. In the event the correlations established show quite convincingly that the newly developed scales do indeed have a sound level of

validity as a result of this comparative test with a highly rated instrument currently existing as a tool for giving a generalised locus of control measure for children of a similar age to those in this research project.

A further series of analyses was then carried out to consider the relationship between the Nowicki-Strickland Scale and the internality scores on the new Health Locus of Control Scales. The results of this investigation are shown below.

Group C N = 23	-.064
Group D N = 21	.053
Total N = 44	-.014

In each case a Spearman's Rank Order Correlation Coefficient was calculated to give the results shown. One might have expected to establish reasonably high levels of negative correlations between the two instruments since Nowicki-Strickland's is a measure of externality and had correlated well with the external component of the new Health Locus of Control measure. However, the lack of such negative correlations seems to reinforce the belief that externality is not necessarily an opposite dimension of internality. Rather the scales should be seen as separate continuums each with its own extremes of strength. This acknowledgement would also support the retention of the

various options within each construct incorporated in the questionnaire. By only having one scale represented with each construct one would not be able to infer the respondent's belief with regard to the remaining two scales no longer included in the instrument.

5.6.19 The Response System

5.6.19.1 The NOT SURE responses

The following table illustrates the total number of responses and means made by gender and group.

Group	NUMBER OF RESPONSES			MEAN RESPONSE PER PUPIL		
	Male	Female	Total	Male	Female	Total
A N=23	77 N=8	83 N=15	160	9.6	5.5	7.0
B N=24	88 N=10	177 N=14	265	8.8	12.6	11.0
C N=23	137 N=12	125 N=11	262	11.4	11.4	11.4
D N=21	94 N=8	140 N=53	234	11.8	10.8	11.1
TOTAL N=91	396 N=38	525 N=53	921	10.4	9.9	10.1

In all 921 responses were made in the NOT SURE column by the 91 pupils, comprising 13.7% of the 6734 responses made. This is almost the number (962) that would be predicted for a normal distribution of responses amongst the seven point response scale adopted in the research design. Such an outcome reinforces the view that a NOT SURE column is a reasonable inclusion in the questionnaire and is neither over-used as a method of 'opting out' nor ignored and therefore under-used by participants.

Overall group C had the highest rate of useage (11.4) and group A the lowest (7.0). Group B had a higher mean than group A which may

indicate an association with academic status and ability. This differential was essentially due to group A girls having an extremely low mean score (5.5) and group B girls being very high (12.6). Such an extremity of usage should be investigated within the sub groups involved rather than at the secondary stage of class or gender groupings. Further study of this finding in future may well be possible.

5.6.19.2 BLANK Responses

Altogether 102 (1.5%) blank responses were made by the 91 pupils out of a total of 6734 responses. This could be further reduced, in terms of comprehending questions, by 18 insofar as one pupil omitted to answer questions from two pages which seems to indicate an error of observation rather than understanding.

However, even taking the total blank responses, the outcome suggests that very little difficulty was encountered by the participants in comprehending questions since all groups had been actively encouraged to make such a response in appropriate circumstances.

The 'situational' questions (19-36) contributed to 46 BLANK responses where pupils only responded to one of the three statements rather than all three. Further clarification of instructions appears to be required in this aspect of the instrument to eliminate such responses in future.

Question 37 received seven BLANK responses. This appears to be associated with the omission of a dividing line between the initial statement "These things are very important to me" and the first option

"Being physically fit". It would seem quite likely that the insertion of such a line will reduce the incidence of BLANK responses in the next phase of the research programme.

Finally the results in this category showed that males made an overwhelming proportion of the BLANK responses recorded. Whereas a normal distribution, based upon the relative proportion of males to females would have resulted in 43 responses by males and 59 by females, in the actual research 70 responses were attributed to males and 32 responses to females.

5.6.20 Summary of Findings

This phase of the research programme has sought to confirm the findings of the Prototype Exercise and explore other related fields of enquiry. The purpose of the Pilot Exercise was described earlier (5.2) in order that its achievement could be assessed at this later stage of the programme. All twelve functions have been performed during the implementation and analysis of this pilot exercise. The degree of success with which the process has been carried out is described in the following summary of findings:

5.6.20.1 The evidence from sections 5.6.1 to 5.6.3 inclusive show that the scales produced exist as valid and reliable measures of health locus of control.

5.6.20.2 The modifications to individual questions were shown to improve the internal reliability levels of the scales as intended. (5.6.1 - 5.6.3).

5.6.20.3 Internality was again shown to be associated positively with higher ability rating and negatively with lower ability rating. (5.6.1.15).

5.6.20.4 'Chance' was confirmed in its positive association with lower ability irrespective of gender (5.6.3.14).

5.6.20.5 The 'powerful others' scale improved its internal consistency and demonstrated a more precise dependency factor than in the Prototype Exercise (5.6.2.13 - 5.6.2.18).

5.6.20.6 'Internality', 'powerful others' and 'chance' tendencies are not necessarily opposing dimensions of a unitary continuum

but should be perceived as co-existing characteristics held in varying degrees by each person (5.6.18.2).

5.6.20.7 Evidence was provided in justification of the constructs selected to represent physical, social and mental dimensions of health (5.6.15.11).

5.6.20.8 The findings supported the case for retaining the alternative questions relating to each construct, both in a general and specific context (5.6.4.5).

5.6.20.9 The valuation of risk taking was shown to be negatively associated with internality (5.6.5.5) at a significant level.

5.6.20.10 The acceptance of personal susceptibility to ill health as a result of behaviour is positively associated with internality (5.6.6.7).

5.6.20.11 Newness was rated much higher by lower ability males than higher ability males (5.6.7.4).

5.6.20.12 Good health was shown to be a highly valued personal asset by most pupils (5.6.8.11).

5.6.20.13 A positive association was demonstrated between valuation of good health and internality (5.6.8.7).

5.6.20.14 A high degree of consistency exists between the valuation of constructs in a general and specific context (5.6.15.4).

5.6.20.15 A high degree of consistency exists between an individual's health locus of control in both a general and specific context (5.6.4).

5.6.20.16 The concurrent validity exercise (see 5.6.18) was very successful in achieving its objective of validating the scales designed for this project.

5.6.20.17 A social concept of health was significantly associated with lower ability children (5.6.16.6).

5.6.20.18 A multi-dimensional perception of health was acknowledged by all groups of pupils, particularly with regard to positive aspects of mental health (5.6.16.16).

5.6.20.19 The qualitative research component through personal interviews provided a considerable source of information regarding pupil reaction to the exercise (5.5).

5.6.20.20 A computer programme has now been designed for use again in the next phase of the research.

5.6.20.21 Only the 'perceived control' questions from the Prototype Exercise have been eliminated from the measuring instrument to date since the retention of all other questions (re-worded where appropriate) have been shown to be necessary.

5.6.20.22 An administration protocol has now been developed for independent use by teachers as a result of this pilot exercise.

5.6.21 A Further Exercise In Reliability

5.6.21.1 Introduction

The reliability of the newly developed Health Locus of Control scales has been described earlier in the Prototype and Pilot Exercise chapters. Alpha reliabilities for the three scales (INTERNAL, POWERFUL OTHERS and CHANCE) were .39, .47, and .75 in the Prototype and .52, .65 and .60 respectively in the Pilot Exercise.

Though such reliabilities might be regarded as reasonable in themselves for a small scale research programme the intention to offer the developed instrument to schools on a wider basis at a later date suggests the desirability of a further improvement in the Alpha reliabilities. Accordingly it was decided that a further exercise to seek to develop the reliability of the scales would be undertaken prior to the field trials programme in local schools.

5.6.21.2 Aims

The major aims of the Reliability Exercise were as follows:

1. To seek to improve the Alpha reliability of the three locus of control scales.

2. To re-design those questions possessing a low item : total scale correlation.

3. To improve pupil understanding of the re-worded questions.

4. To identify questions with a low item : total scale correlation.

5. To confirm the major findings of the earlier research.

5.6.21.3 Research Design

The design of this exercise may be categorised as follows:

1. Identification of questions to be re-designed.

2. The re-wording of these questions.

3. The application of the modified health locus of control scales to a new sample population.

Identification of questions

The computerised analysis of the Pilot Exercise was used to identify those questions in each scale with low item : total scale correlations. Questions with a positive correlation of less than .3 were initially selected as requiring immediate attention in this phase, leading to seventeen questions in all being identified. These were then evaluated by the author prior to being presented to a group of 6 pupils from one of the schools that had participated in the earlier research.

Re-wording the questions

One of the teachers involved in the Prototype Exercise readily agreed, when approached, to a small group of third year pupils (who had originally completed the questionnaire) assisting with the re-wording of the questions mentioned above. Consequently the school was visited on 4th February for this aspect of the research to be undertaken.

Following a brief reminder of the earlier exercise an explanation was given of the purpose of the session. Emphasis was placed upon the value of the pupils' opinions and the help that this would be to the research programme.

Each pupil was given a list of the "weak" questions relating to one scale and the questions were then considered in turn.

Where differences of opinion arose the various reasons were debated and consensus obtained in almost every instance. At the completion of one scale the list of "weak" questions for the next scale were then distributed and discussed. In this way the pupils were not overwhelmed with an extensive list of questions but gradually worked through the exercise in stages.

At the end of the session, which took 50 minutes, the pupils were thanked for their help and then returned to their classroom. Similarly the teacher in question was thanked for again assisting with the research programme.

The Sample Population

It was decided than an entire third year group of pupils would be included in this research phase in order to provide a complete cross section of ability in academic and personal terms. Since the school involved was fully comprehensive there was little likelihood of any academic-related bias being introduced into the sample population. As the research was to be undertaken simultaneously with the four mixed ability tutor groups of the third year the exercise was designed to examine the feasibility of application in school with minimum disruption to normal activities. Additionally the exercise was able to test the independent use of the questionnaire by teachers, guided by prepared "Users' Notes". In all 88 pupils took part in the exercise with the composition of the groups as follows:

	Male	Female	Total
Group A	12	12	24
Group B	9	12	21
Group C	9	11	20
Group D	11	12	23
TOTAL	41	47	88

The Administration of the Revised Questionnaire

5.6.21.4 Arrangements were made for the exercise to be carried out during the tutorial (first period) on Friday 15th February. In order for the four tutors concerned to become familiar

with the questionnaire and Users' Notes the appropriate documents were delivered to the school on Monday 11th February and left with the Deputy Head who had agreed to co-ordinate the exercise within the school.

The four tutors independently distributed the questionnaire and invited pupils to complete it according to the procedure outlined on the front page and in line with the advice given in the Users' Notes. Each group was visited briefly by me during the early part of the tutorial in order to check any difficulties that may have arisen beyond the scope of the prescribed procedure. A quick reminder concerning confidentiality was given to each group together with a request for personal views to be freely expressed in responses.

Each tutor proceeded to adminster the questionnaires independently and return them to the staff room as arranged. Each group was allocated a letter (A - D) and the appropriate questionnaires retained under the group letter. The questionnaires were later numbered consecutively from 1 to 88 in the group order from A - D for ease of identification. The responses from each questionnaire were then entered onto data sheets in readiness for the computer analysis.

The Findings

5.6.21.5

1. The Alpha reliabilities established for the three locus of control scales were as follows:

INTERNALITY	.50
POWERFUL OTHERS	.52
CHANCE	.64

Though these compared favourably with those established in the Prototype and Pilot Exercises there was not the improvement that had been sought in designing this further phase of research.

2. Only 32 blank responses were made out of a total 3,168 responses by the sample population. This rate (1.01%) compared with 1.5% in the Pilot Exercise.

3. The group scale means for the three locus of control scales were very similar and did not portray striking differences (tables R1 - 3). Group A had the highest scale mean for INTERNALITY (60.1) and the lowest scale mean for CHANCE (41.1). This group did not have the lowest mean for the POWERFUL OTHERS scale but this may be due to the similarity of group scale means on that particular scale.

4. The association between corresponding items (general and specific) for each construct are shown in table R4. Clearly the construct "acceptance by friends" stands out as requiring modification since all 3 pairs of items failed to establish a positive correlation.

5. The above result was reinforced by the low item: full scale correlations shown for the "acceptance" questions when compared with the other scale items. This was particularly true of the specific situation items (questions 25 - 27) for this construct which needs to be re-worded.

6. Otherwise the positive association between all corresponding items reinforced the notion of each scales' existence as a definite entity (table R4).

7. Table R5 summarises the correlations between the three items for each construct both in the general and specific context. As expected the majority of correlations are negative since they probe conflicting beliefs.

8. The negative correlations are not highly significant indicating that the items may run at various levels to each other rather than represent directly opposing positions. In other words the scales may not always be polarised in an individual pupil who could score highly on internality yet selectively consult other people for guidance.

9. Table R5 also confirms the findings of the Pilot Exercise that CHANCE and POWERFUL OTHERS may be sub categories of an "externality" tendency. The results of the table indicate that CHANCE and POWERFUL OTHERS had the most positive association in 8 of the 12 instances.

Discussion

5.6.21.6 The modifications to questions did not contribute to higher Alpha reliabilities than hitherto in the earlier phases of the research programme. This finding gives rise to the possibility of a fundamental conflict or dichotomy.

The multi-dimensional nature of the constructs being investigated may in themselves militate against a higher level of Alpha reliability being established. Most research in the field of health locus of control has adopted a limited definition of health (e.g. the medical model) and accordingly constructed the item pool around a narrow range of issues. This may well facilitate the attainment of appropriate reliability measures compared with the comprehensive model of health upon which the current research programme has been based.

Reference was made in chapter 4 (4.3) to the need for specificity in locus of control research and application. Whereas this may be taken to relate to the situation or context of 'locus' beliefs, it perhaps should also be taken to refer to the nature of the constructs incorporated in programmes.

Any effort to raise levels of reliability by restricting the range of constructs or standardising the wording of questions to the point of replication may result in severe loss of richness or quality. Whilst it is important to satisfy the necessary statistical criteria of reliability it

is equally vital that the educational variables involved be validated. Though not mutually exclusive each element must receive due consideration and optimal development, albeit not at the expense of the other.

The reduced rate of "lack of understanding" shows that the re-wording of questions led to improvement in this respect. Since pupils were involved in the re-wording process due credit should be given to them for their contribution to this aspect of the questionnaire.

Another finding reinforced the negative association between INTERNALITY and CHANCE. More importantly, however, it demonstrated that mixed ability groups contain a fuller range of "locus" beliefs than groups based upon academic rating and experience. Score differences of up to 30 points were recorded for each scale within the four groups, clearly showing the range of existing beliefs. The major implication of this outcome is the need to consider each individual pupil separately in terms of locus of control ideology and any pastoral help deemed appropriate as a result.

Repetitive re-wording of items may alter the shape and style of the instrument to such an extent that other components already successfully tested become undermined. This could damage much of the earlier research and development programme. Perhaps the large sample population envisaged for the next phase would help raise Alpha reliabilities to an acceptable level.

A further important consideration is also the eventual use of the instrument as an aid to the personal development of young adults. It would be somewhat sad if many of the concerns of teachers and their pupils could not be included in the material due to an inability to reach certain statistical levels. Again it would be good to reach a satisfactory balance between both areas of need.

APPENDIX I

GOOD HEALTH SURVEY

Boy or Girl .....

Date of birth .....

This is NOT a test. It is an attempt to find out what your opinions and beliefs are about health. There are no right or wrong answers to the questions being asked.

Please answer the questions according to your true feelings

THANK YOU FOR YOUR HELP

Answering the questions

1. The questions that follow ask you to say whether you agree or disagree with something. There are 3 ways of agreeing or disagreeing

   STRONGLY means "very much" or "a great deal"

   SLIGHTLY means "only a bit" or "just a little"

   AGREE (or DISAGREE) means somewhere between STRONGLY and SLIGHTLY

2. If you are not certain what you feel in answer to any question, place a tick in the NOT SURE box against that question.

3. If you do not understand a question or cannot answer it for any other reason LEAVE ALL THE BOXES BLANK against that question.

TRY THIS SAMPLE QUESTION

PLACE A TICK IN ONE OF THE BOXES	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
I am always glad to return to school after the holidays							

PLEASE DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ONLY ON THE SAME LINE

		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
1	Being physically fit is very much a matter of luck							
2	I can do very much to make myself look good to other people							
3	I don't have any say in whether or not my friends accept me.							
4	Whether I agree with my friends depends upon the mood we happen to be in at the time.							
5	If I am worried about something I feel that only I myself can sort it out.							
6	Whether I am happy or not depends more upon how people treat me than anything else.							
7	Whether I am physically fit depends more upon me than anything or anyone else.							
8	Whether or not I look good to others depends more upon how they judge me than what I do for myself.							
9	Being accepted by my friends is more a matter of chance than anything else.							
10	It is me who decides whether my friends and I agree about something.							
11	If I am worried about something I feel that only someone else can sort it out for me.							
12	If my 'stars' say I am going to be happy thats more important than what I or other people do to make me happy.							
13	I would not be able to get fitter than I am now unless someone helped me.							
14	Good looks are something that I either have or haven't from birth and can't do anything about.							
15	I can do very much to get my friends to accept me.							
16	My friends decide whether or not we agree about something.							
17	The best way to sort out worries is to just wait and see how things turn out in the end.							
18	If I am happy its usually due to my own efforts rather than anything else.							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ONLY ON THE SAME LINE

		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
	IF YOU HAD A FITNESS TEST COMING AT SCHOOL FOR A TUTOR GROUP COMPETITION would you:							
19	do nothing and just hope that things go well on the day?							
20	decide that only you could get yourself fitter for the test?							
21	decide that only someone else could get you fitter for the test?							
	IF YOU HAD TO GO FOR AN INTERVIEW would you:							
22	decide that you needed someone else's advice about your looks and appearance?							
23	think that you were quite capable of deciding for yourself how to dress and appear?							
24	decide that your appearance wouldn't make any difference to how you got on?							
	IF SOME FRIENDS WERE TRYING TO GET YOU TO DRINK SOMETHING ALCOHOLIC THAT YOU DIDN'T WANT would you:							
25	refuse even if it meant that you might no longer be accepted by them?							
26	drink it to help you be accepted by them?							
27	hope that something happened to help you get out of drinking it?							
	IF YOU WERE DISCUSSING SOMETHING IMPORTANT WITH FRIENDS AND YOUR OPINIONS WERE DIFFERENT would you:							
28	openly disagree with your friends?							
29	agree with them for some reason?							
30	hope that something caused the conversation to end?							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ONLY ON THE SAME LINE

		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
	IF YOU WERE WORRIED ABOUT A PROBLEM WITH YOUR HOMEWORK would you:							
31	decide that only someone else could help you solve the problem?							
32	just hope that by chance something came into your mind?							
33	decide to keep trying until you solved it on your own?							
	IF SOMETHING HAPPENED AT SCHOOL THAT REALLY PLEASED YOU would you:							
34	put it down to good luck alone?							
35	put it down to your own efforts alone?							
36	put it down to the help you had been given by other people?							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ONLY ON THE SAME LINE

		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
	THESE THINGS ARE VERY IMPORTANT TO ME							
37	Being physically fit							
38	Looking good to other people							
39	Being accepted by my friends							
40	Agreeing with my friends							
41	Sorting out any worries that I have							
42	Being happy							
43	A fitness test in a tutor group competition							
44	Looking good when being interviewed							
45	Drinking alcohol if my friends want me to							
46	Agreeing with my friends in a conversation							
47	Solving any problems with my homework							
48	Good things happening at school							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ONLY ON THE SAME LINE

		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
49	I am not worried about things which may cause me harm in many years time.							
50	There is nothing wrong with taking good care of my health.							
51	Avoiding accidents is not important to me.							
52	I will be healthier now and in future if I take care of my body.							
53	Life would be very boring if I never took any risks.							
54	Good health is not very important to me.							
55	The only way to decide what I think of something is to try it out myself.							
56	If I take chances with my health I make it more likely that I will become ill.							
57	Good health is more a matter of luck than anything else.							
58	I enjoy doing things which have an element of risk.							
59	I think that all new experiences are exciting.							
60	I am more likely to have an accident if I take risks.							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ONLY ON THE SAME LINE

		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
	HEALTH means to me							
61	being fit							
62	having good friends							
63	obeying rules							
64	feeling good							
65	not having an illness or disease							
66	being admired							
67	having a good time							
68	doing what you are told							
69	enjoying life							
70	being liked by people							
71	being good at things							
72	not having any worries							
73	being happy							
74	self discipline and control							

GOOD HEALTH SURVEY

Interview Schedule

1. Group . . . . . .

2. Boy or Girl . . . . . .

3. Date of Birth . . . . . .

4. How would you describe your feelings about filling in the questionnaire?

(PROMPT if necessary)

interesting	☐	enjoyable	☐
boring	☐	not enjoyable	☐
alright	☐	better than the normal lesson	☐

. . . . . .

. . . . . .

. . . . . .

. . . . . .

. . . . . .

5. How did you feel about being asked for your opinion on something?

. . . . . .

. . . . . .

. . . . . .

6. Did it make any difference that the subject was about your health?

. . . . . .

. . . . . .

. . . . . .

7. Were any of the questions difficult or hard in any way?
(PROMPT if necessary)

a) hard to understand? . . . . . .

b) hard to answer? . . . . . .

c) unpleasant or upsetting? . . . . . .

. . . . . .

. . . . . .

. . . . . .

. . . . . .

8. What did you think about the length of the questionnaire?

too long ☐ too short ☐ alright ☐

9. Did you use the NOT SURE box on any question(s)?

yes ☐ no ☐

if YES why was this?
PROMPT (if necessary)

a) you just couldn't give an answer? . . . . . .

b) you didn't want to give an answer? . . . . . .

c) the answer you wanted to give wasn't included? . . . . . .

d) other . . . . . .

. . . . . .

. . . . . .

. . . . . .

10. Did you leave any answer(s) BLANK?

yes ☐ no ☐

if YES why was this?
PROMPT (if necessary)

a) you didn't understand the question? . . . . . .

b) you didn't want to give an answer? . . . . . .

c) the answer you wanted to give wasn't included? . . . . . .

d) other . . . . . .

. . . . . .

. . . . . .

. . . . . .

11. How did you get on with using the boxes to choose your answers?

. . . . . .

. . . . . .

. . . . . .

. . . . . .

12. Did the questions make it easy or hard for you to say what you really felt about these subjects?

. . . . . .

. . . . . .

. . . . . .

. . . . . .

13. Did this exercise make you think again about some of your health opinions?

yes ☐ no ☐ not really ☐

14. Have you now changed any of your health opinions?

yes ☐ no ☐ not really ☐

15. Is there anything else I could have said or done to make sure pupils let me know exactly what opinions they had on these subjects?

. . . . . .

. . . . . .

. . . . . .

. . . . . .

. . . . . .

APPENDIX III

TABLE OF RANDOM NUMBERS

2017	4228	2317	5966	3861	0210	8610	5155	9252	4425
7449	0449	0304	1033	5370	1154	4863	9460	9449	5738
9470	4931	3867	2342	2965	4088	7871	3718	4864	0657
2215	7815	6984	3252	3254	1512	5402	0137	3837	1293
9329	1218	2730	3055	9187	5057	5851	4936	1253	9640
4504	7797	3614	9945	5295	6985	0383	5187	8556	2237
4491	9949	8939	9460	4849	0677	6472	5926	0851	2557
1623	9102	1996	4759	8965	2784	3092	6337	2624	2366
0450	6504	6565	8242	7051	5501	6147	8883	9934	8237
3270	1772	0361	6626	2471	2277	8833	1778	0892	7349
0364	5907	4295	8139	0641	2081	9234	5190	3908	2142
6249	0090	6786	9348	3183	1907	6768	4903	2747	5203
6100	9586	9836	1403	4888	5107	3340	0686	3376	6857
8903	9049	2874	2104	0996	6045	2203	5280	0179	3381
0172	3385	5240	6007	0671	8927	1429	5524	8579	3196

Source: The Open University,
Methods of Educational Enquiry.
E 341. Block 2. p 39.

APPENDIX IV

PERSONAL OPINION SURVEY

Group . . . . . .

Boy or Girl . . . . . .

Date of birth . . . . . .

This is not a test. It is an attempt to find out what your opinions are about things which may happen to you at some time or another.

Remember there are no right or wrong answers so please state what you really think.

		Please tick	
		YES	NO
1.	Do you believe that most problems will solve themselves if you let them?		
2.	Do you believe that you can stop yourself from catching a cold?		
3.	Most of the time do you feel that doing well at school is very important to you?		
4.	Are some people just born lucky?		
5.	Are you often blamed for things that just aren't your fault?		
6.	Do you believe that if somebody studies hard enough he or she can pass any subject?		
7.	Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway?		
8.	Do you feel that if things start out well in the morning that its going to be a good day no matter what you do?		
9.	Do you feel that most of the time parents listen to what their children have to say?		
10.	Do you believe that wishing can make good things happen?		
11.	When you get punished does it usually seem to be for no good reason at all?		
12.	Most of the time do you find it hard to change your friends' minds or opinions?		
13.	Do you think that cheering (shouting) helps a team win more than luck does?		

		Please tick	
		YES	NO
14.	Do you feel that its almost impossible to change your parent's mind about anything?		
15.	Do you believe that your parents should allow you to make most of your own decisions?		
16.	Do you feel that when you do something wrong there is very little you can do to put it right?		
17.	Do you believe that the reason some people are good at sport is because they were born with that gift rather than for any other reason?		
18.	Are most other people of your age stronger than you?		
19.	Do you feel that one of the best ways to deal with most problems is just not to think about them?		
20.	Do you feel that you have a lot of choice in deciding who your friends are?		
21.	Do you believe that if you walk under a ladder it will bring you bad luck?		
22.	Do you think that doing your homework helps decide how well you do at school?		
23.	Do you feel that if someone of your age decides to hit you there's little you can do to stop him or her?		
24.	Have you ever had a good luck charm?		
25.	Do you believe that whether or not people like you depends upon how you act?		
26.	Will your parents usually help you if you ask them to?		
27.	Have you felt that when people were nasty to you it was usually for no reason at all?		
28.	Most of the time do you feel that you can change what might happen to-morrow by what you do to-day?		
29.	Do you believe that when bad things are going to happen they will happen no matter what you try to do to stop them?		
30.	Do you think that pupils of your age can get their own way if they just keep trying?		
31.	Most of the time do you find it hopeless to try to get your own way at home?		
32.	Do you feel that when good things happen they happen because of hard work?		

		Please tick YES	NO
33.	Do you feel that when someone of your age wants to be your enemy there's little you can do to change matters?		
34.	Do you feel that its easy to get friends to do what you want them to?		
35.	Do you usually feel that you have little to say about what you get to eat at home?		
36.	Do you feel that when someone doesn't like you there's little you can do about it?		
37.	Do you usually feel that its almost useless to try in school because most other pupils are brighter than you?		
38.	Are you the kind of person who believes that planning ahead makes things turn out better?		
39.	Most of the time do you feel that you have little say in what your family decides to do?		
40.	Do you think its better to be smart (clever) than to be lucky?		

The Computer Programme

```
JOB (: BEDGTM. RUN)
DELETE (  HEALTH    )
SPSS  (SAVEFILE = HEALTH      )

- - - - -

RUN  NAME                    LOCUS

FILE  NAME                   HEALTH

VARIABLE  LIST               GROUP, GENDER, Q1  TO  Q74

INPUT  MEDIUM                CARD

INPUT  FORMAT                FIXED  (76 (F1.0) )

N  OF  CASES                 91

VALUE  LABELS                GROUP (1)A  (2)B  3(C)  4(D) / GENDER
                             (1) MALE  (2)  FEMALE

COMPUTE                      INTERNAL = Q2 + Q5 +  Q7 + Q10 + Q15+ Q18+ Q20 +
                             Q23 +Q25+ Q28+ Q33+ Q35

COMPUTE                      POWERFUL = Q3 + Q6+ Q8+ Q11+ Q13+ Q16 + Q21+ Q22 +
                             Q26+ Q29+ Q31+ Q36

COMBUTE                      CHANCE = Q1 + Q4 +Q9 +Q11 +Q14 +Q17  +  Q19  +
                             Q24 +Q27 +Q30 +Q32 +Q34

COMPUTE                      FITNESS = Q1 + Q7 +Q13 +Q19 +Q20 +Q21 +Q37 +Q43

COMPUTE                      APPEARANCE = Q2 + Q8 +Q14 +Q22 +Q23 +Q24 +Q38 +Q44

COMPUTE                      ACCEPTANCE = Q3 + Q9 +Q15 +Q25 +Q26 +Q27 +Q39 +Q45

COMPUTE                      AGREEING = Q4 + Q10 +Q16 +Q28 +Q29 +Q30 +Q40 +Q46

COMPUTE                      WORRIES = Q5 + Q11+Q17 +Q31 +Q32 +Q33 +Q41 +Q47

COMPUTE                      CONTENTMENT = Q6 + Q12 +Q18 +Q34 +Q35 +Q36 +Q42 +
                             Q48
```

```
COMPUTE                    MISCELL = Q49+ Q50+Q51+Q52+Q53+Q54
                           Q55+Q56+Q57+Q58+Q59 +Q60

COMPUTE                    CONCEPT = Q61 + Q62 +Q63 +Q64 +Q65 +Q66
                           Q67 +Q68 +Q69 +Q70 +Q71 +Q72 +Q73 +Q74

CONDESCRIPTIVE             Q1  to Q74

STATISTICS                 ALL

READ  INPUT  DATE
Backlash F
.r space Head
a

RELIABILITY                VARIABLES = Q2, Q5, Q7, Q10, Q15, Q18, Q20,
                           Q23 ,Q25, Q28, Q33, Q35/

                           SCALE (TEST) = Q2, Q5, Q7, Q10, Q15, Q18,
                           Q20, Q23, Q25, Q28, Q33, Q35/

STATISTICS                 ALL

RELIABILITY                VARIABLES = Q3, Q6, Q8, Q11, Q13, Q16, Q21,
                           Q22, Q26, Q29, Q31, Q36/
                           SCALE (TEST) = Q3, Q6, Q8, Q11, Q13, Q16,
                           Q21, Q22, Q26, Q29, Q31, Q36/

STATISTICS                 ALL

  etc                        etc

RELIABILITY                VARIABLES = Q61, Q62, Q63, Q64, Q65, Q66
                           Q67, Q68, Q69, Q70, Q71, Q72, Q73, Q74/

STATISTICS                 ALL

COMPUTE                    Q100 = Q61 + Q65

PEARSON CORR               Q100 WITH INTERNAL

COMPUTE                    Q101 = Q62 + Q66 + Q70

PEARSON CORR               Q101 WITH INTERNAL

COMPUTE                    Q102 = Q64 + Q67 + Q69 + Q73

PEARSON CORR               Q102 WITH INTERNAL

COMPUTE                    Q103 = Q72

PEARSON CORR               Q103 WITH INTERNAL
```

```
COMPUTE                    Q104 = Q63 + Q68 + Q74
PEARSON  CORR              Q104 WITH INTERNAL

COMPUTE                    Q105 = Q71
PEARSON CORR               Q105 WITH INTERNAL

COMPUTE                    Q106 = Q49 + Q52 + Q56 + Q60
PEARSON CORR               Q106 WITH INTERNAL

COMPUTE                    Q107 = Q50 + Q51 + Q54 + Q57
PEARSON CORR               Q107 WITH INTERNAL

COMPUTE                    Q108 = Q53 + Q58
PEARSON CORR               Q108 WITH INTERNAL

COMPUTE                    Q109 = Q55 + Q59
PEARSON CORR               Q109  WITH INTERNAL
```

Repeated then for correlation with CHANCE and POWERFUL

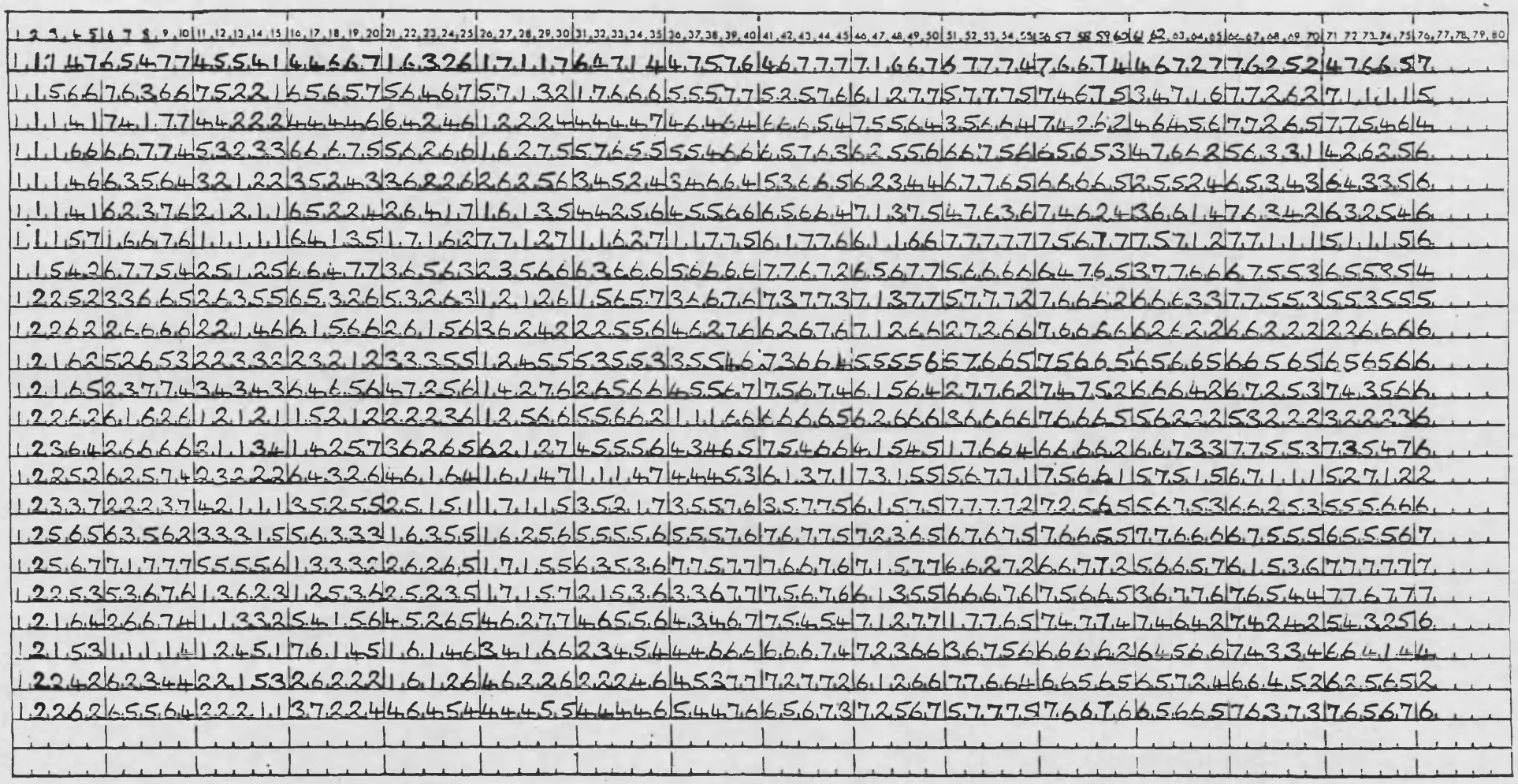
```
COMPUTE                    Q110 = Q2 + Q5 + Q7 + Q10 + Q15 + Q18
COMPUTE                    Q111 = Q20 + Q23 + Q25 + Q28 + Q33 + Q35
PEARSON CORR               Q110 WITH Q111
COMPUTE                    Q112 = Q3 + Q6 + Q8 + Q11 + Q13 + Q16
COMPUTE                    Q113 = Q21 + Q22 + Q26 + Q29 + Q31 + Q36
PEARSON CORR               Q112 WITH Q113
COMPUTE                    Q114 = Q1 + Q4 + Q9 + Q11 + Q14 + Q17
COMPUTE                    Q115 = Q19 + Q24 + Q27 + Q30 + Q32 + Q34
PEARSON CORR               Q114 WITH Q115
COMPUTE                    Q136 = Q64 + Q67 + Q69 + Q73
COMPUTE                    Q137 = Q72
PEARSON CORR               Q136 WITH Q137

SAVE  FILE                 HEALTH
FINISH
* + + +
SAVE (HEALTH)
LTD
* * * *
```

Author M.J. HEAD

Date NOV. 1984

DATA

Title LOCUS OF CONTROL



DATA

Author M.J. HEAD

Title LOCUS OF CONTROL

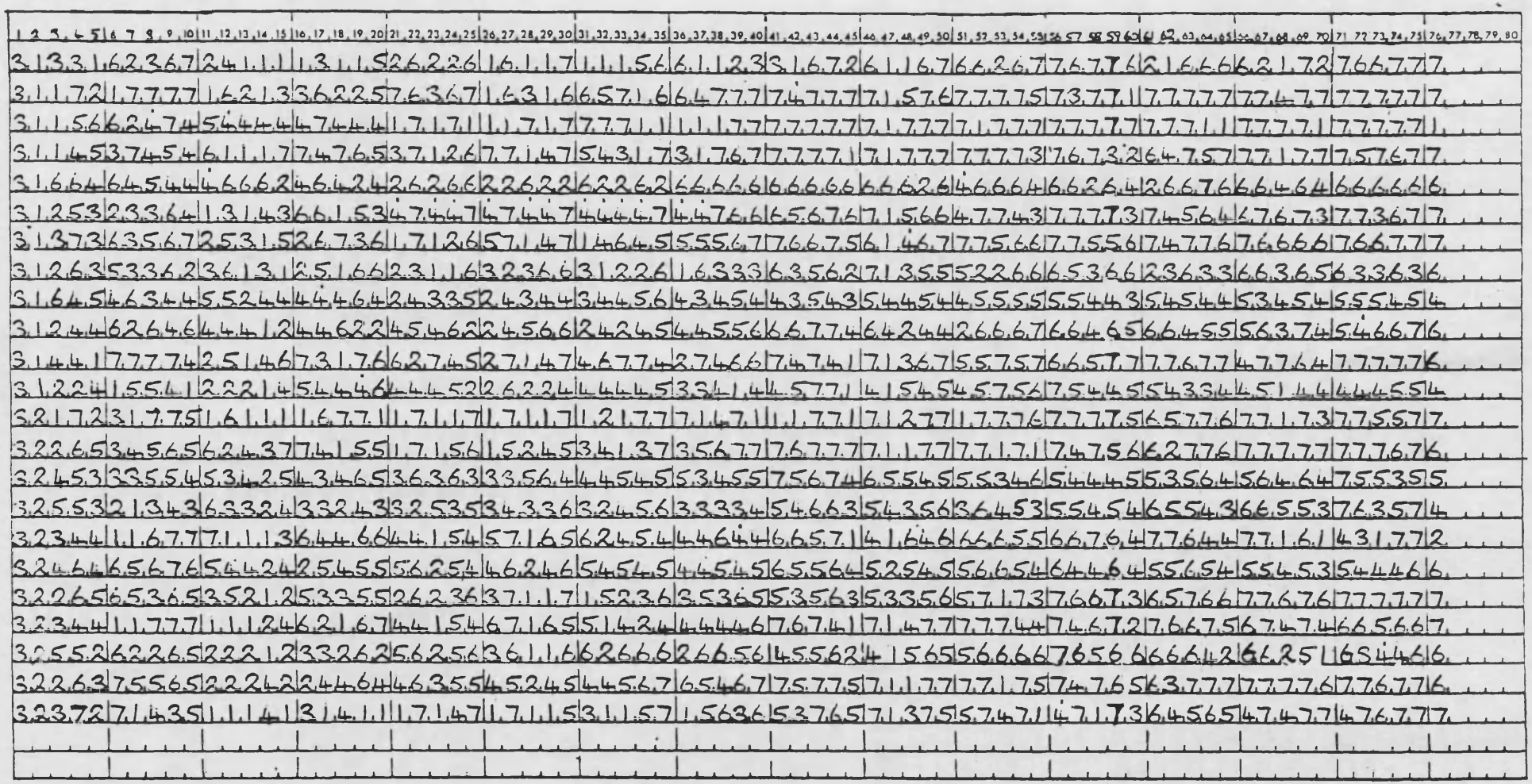
Date NOV. 1984

DATA

Author M.J. HEAD

Date NOV 1984

Title LOCUS OF CONTROL



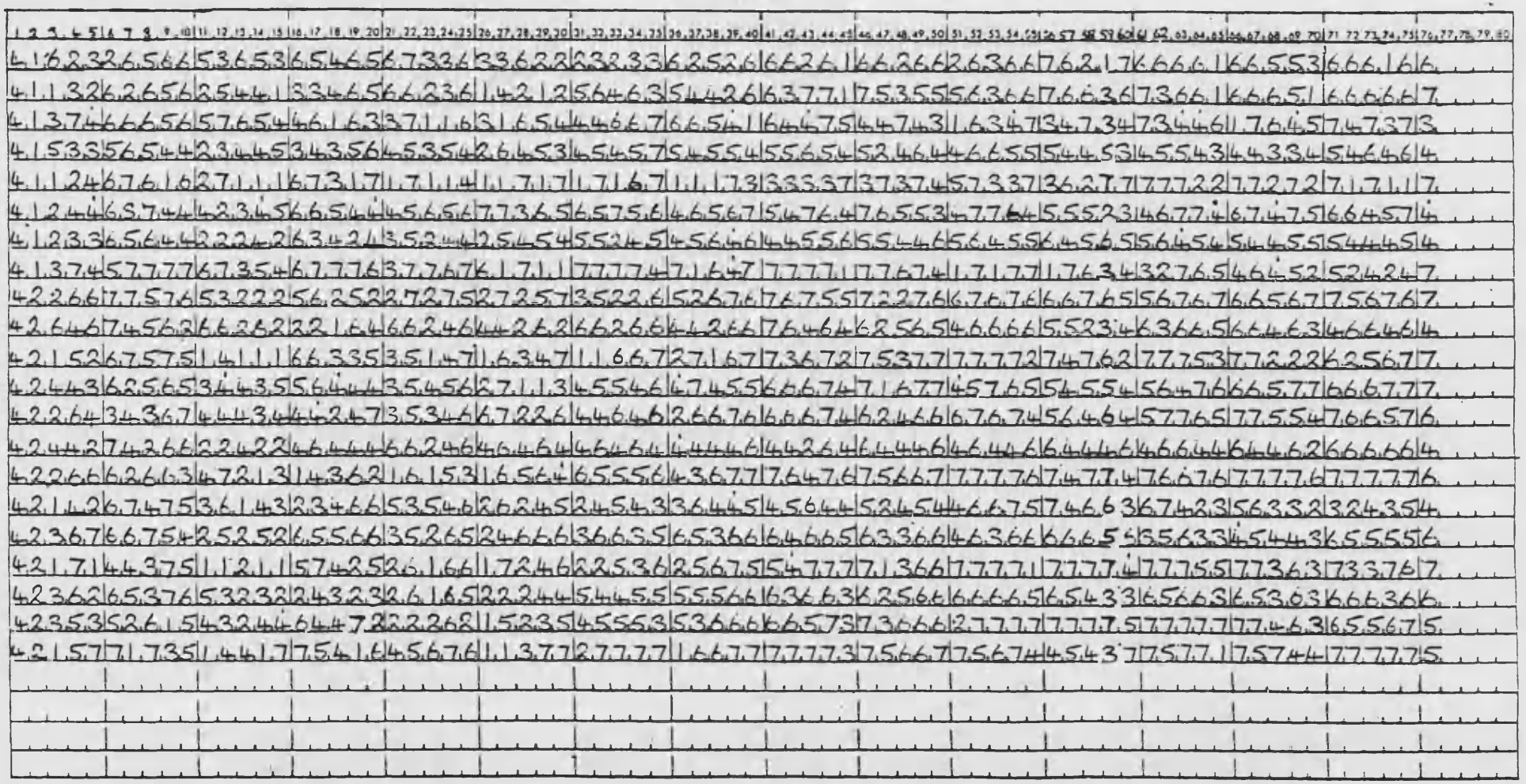
DATA

Author M.J. HEAD

Title LOCUS OF CONTROL

Date NOV. 1984

Page 4 of 4



CHAPTER 6

AN INVESTIGATION INTO THIRD YEAR SECONDARY SCHOOL PUPILS' HEALTH LOCUS OF CONTROL BELIEFS AND CONCEPTS OF HEALTH

6.1 INTRODUCTION

The development of the HEALTH LOCUS OF CONTROL SCALES has been undertaken in two major phases, the Prototype and Pilot Exercises, followed by a further Reliability Exercise. At each stage modifications have been made to the item pools as a result of the findings. Such changes have been concerned with the specific wording, or occasionally the concept of questions. Clearly this latter step has only been taken in exceptional circumstances since it could well affect the pattern of the scale involved and its relationship with corresponding items in other pools comprising the remaining two scales.

Having reached this stage of the research programme it was considered appropriate to administer the scales to a larger sample of third year pupils to obtain a clearer picture of their health locus of control beliefs and health concepts than obtained from the previous sample populations. Secondly the investigation would provide a further opportunity to measure both the validity and reliability of the scales, thereby assessing the degree of progress made as a result of the latest phase in the development programme.

6.2 AIMS

The major aims of the investigation may be summarised as:

i) to collect data concerning the health locus of control beliefs and health concepts of a representative sample of third year secondary school pupils;

ii) to compare the results of this enquiry with those obtained from earlier research;

iii) to identify particular trends or differences between groups of pupils;

iv) to test further the reliability of the scales and their individual items;

v) to identify any question(s) causing problems of comprehension;

vi) to investigate the perception of health of the sample population;

vii) to identify the association between the three health locus of control scales and the sub scales representing risk taking, newness, perceived susceptibility to ill health and valuation of good health;

viii) to identify the correlation between the valuation of a construct and its locus of control belief;

ix) to identify the association between the beliefs held about each construct in a general and specific context;

x) to establish a system of profiling each pupil's health locus of control scores;

xi) to identify any remaining weaknesses in the scales and propose further modifications that would contribute to the scales' development; and

xii) to establish an effective protocol for the administration of the measure.

6.3 RESEARCH DESIGN

6.3.1 The Health Locus of Control Scales

The Reliability Exercise did not contribute to any significant improvement in the reliability of the scales. Certain questions still remained weak in terms of their item: total scale correlation (Table R5). Rather than consider only a development of the scales used in the Reliability Exercise it was decided to review all three phases of the research programme and seek to gain the maximum benefit from the findings of each phase. A card index system was therefore created representing each item used at all stages. The reliability of each item via the item: total scale correlations was recorded. The card index system enabled a number of comparisons to be made such as:

i) any change in the wording or meaning of each item during the three phases;

ii) the variation in each item's correlation with its total scale;

iii) the consistency of wording and meaning between the three items representing each construct;

iv) the consistency of wording and meaning between corresponding items in a general and specific context; and

v) the relationship between all twelve items representing each of the three health locus of control scales.

Since the wording and meaning of certain items has been altered on occasions during the research programme it was clearly not appropriate to simply select the items on the criteria of the highest correlation established with the particular total scale. Such a method would have seriously undermined consistency of wording and meaning of various items both within and between scales. The pattern of each scale, composed of its twelve-item pool, would also have been fragmented and distorted if that process of item selection had been adopted.

The system preferred was to study each construct in turn and select firstly the item having the highest correlation with its own scale. The remaining two items for the construct were then selected on account of similarity in pattern of wording and the highest item: total scale correlation. This requirement for consistent wording between items and retention of each scale's pattern meant that on occasions an item containing a higher correlation with its own scale had to be discarded in preference to an alternatively worded question or a new question designed in its place.

As a result of this review process the scales remained as holistic entities representing interaction between the physical, social and mental dimensions of health. At the same time the best statistical features of many items were retained whilst the modifications helped to ensure consistency within scales and between corresponding items across the scales.

The major changes made to the measure as a result both of this review process and the findings described earlier (5.6) were as follows.

i) The construct "agreeing with friends" was modified to be more accurately described as "disagreeing with friends".

ii) The specific construct "acceptance by friends" depicted a situation where the theme of "doing a favour for a friend" was used rather than drinking alcohol or smoking as in earlier phases of the research.

iii) No statements were used which contained a negative personal characteristic as an example of a "POWERFUL OTHERS" scale item. Re-wording ensured that the locus of any decision, attitude or action was clearly with another person in all items representing this scale.

iv) The valuation items were modified accordingly to accommodate i) and ii) above.

v) Question 50 (Good Health) was replaced by the original item used in the Prototype Exercise (see 5.6.8.8.)

vi) Question 55 (Newness) was reworded to provide greater consistency with the other scale item (see 5.6.7.9).

The modified Health Locus of Control Scales (Appendix 1) contained seventy four questions as in the Pilot Exercise. The composition of the questions followed a similar pattern also with eighteen items representing the constructs in a general context, eighteen items for the specific context, twelve items probing the valuation of

constructs, twelve items representing sub scales (Newness, Risk Taking, Susceptibility to Ill Health and Valuation of Good Health) and fourteen items investigating concepts of health.

The questionnaire again contained a seven part response format ranging from strongly agree to strongly disagree. A scoring system of 7 to 1 was allocated to the responses from strongly agree to strongly disagree with a NOT SURE response receiving a score of 4. A colour coding was used on the data sheets to discriminate between a score of 4 being allocated to a tick in the NOT SURE box (black), a completely blank response (red) signifying lack of comprehension (see instructions on page 1 of the questionnaire) and more than 1 tick on the line of boxes (green).

6.3.2 The Sample Population

The research and development programme to date has been undertaken with a somewhat restricted range of third year populations. In the Prototype Exercise three distinct academic groups formed a sample of 72 pupils. The Pilot Exercise involved two groups of mixed academic ability and one group each of high and low academic ability, making a total of 91 pupils in all. Thirdly the Reliability Exercise was carried out with 88 pupils (four groups) who were taking part in mixed ability tutorials at the time. Each sample population presented advantages to the research programme which aided the development of the scales.

In planning the next research phase two issues needed to be resolved. The first involved the selection of items from earlier research undertaken (see 6.3.1) and the second concerned the target group. A larger

sample population drawn from a greater number of schools would produce a more representative selection of third year secondary school pupils than on previous occasions. Provided that the scales retained their validity and reliability the findings would present a more accurate view of health locus of control beliefs than hitherto. It was therefore decided to seek the agreement of six secondary schools in Wiltshire to each allow the scales to be administered to two groups of third year pupils. This would provide the sample size required for carrying out the statistical analysis of the scales whilst also enabling an appropriate collection of data to be made concerning health locus of control beliefs and health concepts.

6.4 ADMINISTERING THE HEALTH LOCUS OF CONTROL SCALES

Six schools in all agreed to participate in the research programme as a result of a personal approach through the senior member of staff responsible for Social and Personal Education.* The scales were administered during May 1985 by the author in two schools and by tutors in the four remaining schools. Upon collection the questionnaires were numbered consecutively and retained in the groups as completed. The structure of the sample population is shown in Figure 1 overleaf.

* All secondary schools in Wiltshire have delegated a senior member of staff to hold such a responsible position as part of the LEA scheme of Social and Personal Education.

Since tutorials were selected by schools as the most convenient time to carry out the research programme it meant that academic rating could not be used as a variable for later statistical analysis. Tutor groups comprise pupils of mixed academic ability and no measure of this factor had been included within the questionnare. Nonetheless the next research phase would still enable the reliability of the new scales to be further tested as well as providing additional data concerning the health locus of control beliefs of individuals and groups.

FIGURE 1

SCHOOL	GROUP	MALE	FEMALE	TOTAL
1	A	15	11	26
1	B	13	12	25
2	C	8	9	17
2	D	11	9	20
2	E	10	8	18
3	F	9	8	17
3	G	10	9	19
3	H	9	7	16
4	I	11	17	28
4	J	12	16	28
5	K	11	9	20
5	L	11	14	25
5	M	10	11	21
6	N	9	10	19
6	O	4	7	11
TOTALS	14	153	157	310

The Findings

6.5 THE FINDINGS

The tables relating to this chapter are in Part Two of this thesis.

6.5.1 The INTERNAL Scale

Questions 2, 5, 7, 10, 15, 18, 20, 23, 25, 28, 33 and 35 refer. Full details of the correlations between items are shown in Table 2 whilst item and scale means are illustrated in Table 1. Item: full scale correlations are shown in Table 3. Scale means by gender are shown in Table 11 and standard deviations by group in Table 12.

Results

6.5.1.1 An Alpha reliability coefficient of .57 was established for the scale.

6.5.1.2 Of the 66 correlations between the 12 items comprising the scale 56 were found to be positive (17 significant*) and 9 negative (none significant), with 1 neutral correlation.

6.5.1.3 All 12 items correlated positively with the full scale TABLE 3.

6.5.1.4 Scale means varied from group to group. The highest scale mean (67.8) was recorded by group G and the lowest (59.4) by group K. Table 1. A t-test found this differential to be significant at a level of $P < .001$.

* r = .15 and above

6.5.1.5 Groups from the same school varied in their response to the scale. Groups F and G showed means of 62.4 and 67.8 respectively whilst groups K and L had scale means of 59.4 and 64.6. A t-test again revealed levels of significance at $P < .03$ and $P < .008$ respectively.

6.5.1.6 The scale means for males and females were very similar being 63.3 and 63.0 respectively.

6.5.1.7 Table 11 however reveals considerable differences in responses when the gender sub groups are identified within the tutorial groups. The highest scale mean for males (68.3) was attained by group H and the lowest (59.9) by group K.

6.5.1.8 For females the highest scale mean (69.7) was recorded by group G and the lowest (58.9) by group K.

6.5.1.9 The variation in scores for females was clearly greater than for males, as shown by the standard deviations for male and female (6.5 and 6.7 respectively) in Table 12.

6.5.1.10 Standard deviations for full groups varied from 7.8 for group H to 4.9 for group M. This differential was found to be significant ($P < .05$).

6.5.1.11 Even groups with similar scale means showed differences in standard deviations. Groups C and I for instance recorded standard deviations of 4.8 and 6.8 whilst having scale means of 62.6 and 62.2 respectively. Though not reaching a level of significance a clear difference in group response is still apparent.

6.5.1.12 The scale mean for the total sample was 63.2.

6.5.1.13 Of the 12 scale items, question 7 (fitness) had the highest item mean (5.9).

6.5.1.14 Question 33 (specific worries) had the lowest item mean (4.7).

6.5.1.15 Question 35 (specific contentment) showed the highest correlation (.37) with the full scale.

6.5.1.16 Questions 5 (worries) and 23 (specific appearance) had the lowest correlation (.12) with the full scale.

6.5.1.17 Questions 25 and 35 consistently associated well with other items, showing 11 positive correlations out of 11 in each case.

6.5.1.18 Question 23 was least successful in having only 17 positive and 4 negative correlations with other items of the scale.

6.5.1.19 When comparing each construct in its general and specific context 5 out of 6 positive correlations were established for the INTERNAL items (TABLE 26). Of these correlations 4 were significant, 3 being at a level of $P < .001$.

Discussion

6.5.1.20 The number of significant correlations established was such that only values of $P < .01$ and above have been denoted in Table 2. In the Prototype and Pilot Exercises values of $P < .05$ were recorded and included in the report.

6.5.1.21 Improvements were again demonstrated when comparing these findings with those of the earlier research. The Alpha reliability increased from .52 to .57 whilst the number and quality of inter-item correlations also improved considerably in this research phase (e.g. 17 correlations above $P < .01$ compared with 7 above $P < .01$ in the Pilot Exercise).

6.5.1.22 With regard to item: total scale associations the level of correlations improved in the latest exercise. Whereas 3 correlations below .10 were shown in the Pilot Exercise (Table 5) the lowest in this phase was .12 (see 6.5.1.16).

6.5.1.23 The scale mean for the total sample was much higher than that established in the Pilot Exercise (63.2 and 57.2 respectively). The latter pupils were however measured in the autumn term of their third year and would thus be several months younger on average than the current sample population. This would tend to confirm the findings of Nowicki (1973) and Parcel (1982) that the tendency towards internality increases with age.

6.5.1.24 Even within the sample population variation of response for this scale is clearly apparent (see 6.5.1.5). This may of course reflect an unequal distribution of personality or experience between the mixed ability groups.

6.5.1.25 Academic ability could not be associated with any of the findings on this occasion since all the groups were of mixed academic ability. Schools tend to select tutorials as being

most convenient for such research and tutor groups are usually composed of a wide academic range of ability.

6.5.1.26 Gender was not found to be a major determinant, in earlier phases, of the variation in scale means compared with academic rating. In this exercise the scale means for male and female were very similar (see 6.5.1.6) as they were in the Pilot Exercise. The fact that the scale mean for the full sample population increased in this latest phase appears to be primarily due to the age factor, as mentioned earlier (6.5.1.23).

6.5.1.27 Nonetheless Table 11 shows clear evidence that gender groups vary considerably within tutorial groups to affect group norms accordingly. Group K and group D males lower the groups' scale means whereas group H males act in an opposite direction. The same diminishing effect upon group norms is provided by group K females but an enhancing effect is created by group G females. Since the overall scale mean for gender was similar (male 63.3 and female 63.0) it is not possible to claim a general effect by gender upon tutorial group norms. It can be stated with confidence however that certain gender groups demonstrate marked differences from the norm which require further investigation in terms of school and life experiences, cultural norms and other variables.

6.5.1.28 The variation in standard deviations of groups indicate inconsistent patterns of scoring both within and between

gender sub groups. Differences of up to 30 points on the scale have been recorded by pupils of the same group. This further supports the need to examine the responses of individual pupils in addition to inter-group analysis in order that the fullest possible help and support may be given to those so identified as being in need of it.

6.5.1.29 The re-wording of question 10 in particular (and also question 5) appears to have been successful in raising both the general level of agreement with the constructs and number of positive correlations established. The lowest item mean in this exercise was 4.7 compared with 3.4 in the previous phase of the research.

6.5.1.30 Question 7 (fitness) obtained the highest level of agreement in both this and the previous research. This would seem to demonstrate an acknowledgement that personal control over fitness is more important than other factors. Whether such perception leads to appropriate behaviour is another matter associated with personal values, motivation and satisfaction.

6.5.1.31 Table 26 shows the relationship between the 6 INTERNAL items phrased in a general context against the 6 items phrased in a specific context. Not only do individual pairs reveal good positive correlations but also the composite sub scales (general and specific) show a highly significant ($P < .001$) correlation in existence.

6.5.1.32 The above results taken as a whole give much support to the contention that the re-wording and compilation of items (see

6.3.1) has developed the scale's existence as a valid entity and as an appropriate measure of the trait of internality in adolescents of this age.

6.5.2 The POWERFUL OTHERS Scale

Questions 3, 6, 8, 11, 13, 16, 21, 22, 26, 29, 31 and 36 refer. Full details of correlations between items are shown in Table 5, item (scale) means in Table 4 and item: total scale correlations in Table 6. Scale means by gender are shown in Table 11 and standard deviations by group in Table 12.

Results

6.5.2.1 An Alpha reliability coefficient of .51 was established for the scale.

6.5.2.2 Of the 66 correlations between the 12 items of the scale 56 were found to be positive (10 significant*) and 10 negative.

6.5.2.3 All 10 negative correlations were less than .1.

6.5.2.4 All 12 items correlated positively with the full scale (TABLE 6).

6.5.2.5 Questions 3 (acceptance by friends) and 11 (worries) had the lowest correlation (.12) with the full scale and question 21 (specific fitness) the highest (.26).

6.5.2.6 The scale mean for the total population was 49.9.

6.5.2.7 Group E showed the highest scale mean (53.1) and group J the lowest (48.1). A t-test revealed a significance level of $P < .05$ for this finding.

* r = .15 and above

6.5.2.8 The scale mean was 49.6 for males and 50.2 for females.

6.5.2.9 The highest scale mean for male sub-groups was recorded by group E (54.8) and the lowest by group H (43.0).

6.5.2.10 The highest scale mean for female sub groups was recorded by group H (54.9) and the lowest by group B (46.5).

6.5.2.11 The above two findings were reflected in the standard deviations for male and female groups in general (7.7 and 7.2 respectively).

6.5.2.12 Standard deviations for full tutorial groups varied from 9.6 (group H) to 5.7 (group I) This differential was found to be significant ($P < .01$).

6.5.2.13 Even groups with similar scale means recorded differences in standard deviation. Groups M and O had standard deviations of 5.9 and 9.0 whilst showing scale means of 50.2 and 50.3 respectively. This was found to be significant at a level of $P < .05$.

6.5.2.14 Question 31 (specific worries) had the highest item mean (5.4) and question 8 (appearance) the lowest (2.5).

6.5.2.15 Question 21 (specific fitness) demonstrated the most consistent relationship with other items with 11 out of 11 positive correlations.

6.5.2.16 Questions 11 (worries) and 29 (specific disagreeing) were least successful in having 8 positive and 3 negative correlations with other items.

6.5.2.17 When comparing the constructs in their general and specific context all 6 correlations were in a positive direction with 3 being at a significance of $P < .001$ (Table 30).

Discussion

6.5.2.18 The Alpha reliability coefficient was disappointingly lower than that established in the Pilot Exercise (.51 as against .65). This may well have been due to the modifications made to certain scale items which were necessary in order to retain consistent wording style amongst items representing the same constructs.

6.5.2.19 In compensation it is satisfying to note the retention of a high percentage of positive inter-item correlations and a maximum 12 item: full scale correlations. This together with the good relationship between constructs in their various contexts (6.5.2.17) demonstrates that a reliable scale has been developed as a major component of the total measure.

6.5.2.20 The overall scale mean of 49.9 was higher than in the Pilot Exercise (45.0) even though on average the current pupils were several months older than their earlier counterparts. This finding supports the outcome of the previous phase in questioning a reduction in dependency with age (see 5.6.2.18). Of course, 6 months may not be a sufficient period in which to observe any major discrepancy. Equally it may be that an increase in internality may not be accompanied by a simultaneous decrease in dependency but

rather lead to some delayed effect as adolescents learn to discriminate gradually between when to seek guidance and when to "go it alone".

6.5.2.21 Whereas males scored higher than females in the Pilot Exercise, in this phase the scale means were very similar. In fact this finding replicates the situation in the initial Prototype Exercise as it does also with regard to the overall scale mean. In each phase the pupils were of a similar age in that both exercises were carried out during May. The Pilot Exercise, on the other hand, was undertaken during October of the pupils' third year.

6.5.2.22 Considerable variation of scoring was demonstrated within gender sub groups (see 6.5.2.9 to 6.5.2.11) both in terms of scale means and standard deviations. Since the overall scale mean for males and females were similar, as were the standard deviations, it further supports the need to examine patterns of response within groups. Variation of up to 30 points were again recorded by fellow pupils in the same groups irrespective of gender. Equally groups with almost identical scale means revealed quite diverse standard deviations.

6.5.2.23 Gender differences were certainly evident in the case of group H where males recorded a scale mean of 43.0 as opposed to the females having a scale mean of 54.9. This differential certainly requires further investigation for the educational experiences of each sub group would appear

to be quite similar. Special circumstances may indeed prevail to explain the situation. Only through such enquiry can a better understanding be gained of the ideology of young people in this realm of life.

6.5.2.24 In other instances however gender sub groups acted inconsistently compared with group H. Whereas group B females scored lowly and therefore reduced the group B norm, group E males raised the scale mean of their group. Gender variables need to be examined for precise effect within each particular group rather than be accorded a general effect irrespective of the circumstances unique to the life experiences of those involved in the research programme.

6.5.2.25 Sub scales for the POWERFUL OTHERS scale can be formed from the 6 pairs of items representing the scale in a general and specific context. Table 30 illustrates a maximum set of positive correlations between the items as well as a highly significant positive association ($P < .001$) between the sub scales.

6.5.3 The CHANCE Scale

Questions 1, 4, 9, 12, 14, 17, 19, 24, 27, 30, 32 and 34 refer. Full details of the correlations between items are given in Table 8, item (scale) means in Table 7 and item: total scale correlations in Table 9. Scale means by gender are shown in Table 11 and standard deviations by group in Table 12.

Results

6.5.3.1 An Alpha reliability of .76 was established for the scale.

6.5.3.2 Of the 66 correlations between the 12 items comprising the scale all were found to be in a positive direction.

6.5.3.3 Of these positive correlations 9 were at a level of significance* of $P < .01$ and 43 at $P < .001$.

6.5.3.4 All 12 items correlated positively with the full scale.

6.5.3.5 Scale means varied considerably between groups, the highest being recorded by group L (48.2) and the lowest by group H (35.1). A t-test found this differential to be significant at a level of $P < .001$.

6.5.3.6 There was some variation between groups from the same school with regard to the scale mean. Groups C and E demonstrated the largest differential with a scale mean of 40.9 and 45.6 respectively.

6.5.3.7 The scale mean for the total sample population was 42.1.

* $r = .15$ and above

6.5.3.8 The scale means for males and females were again very similar at 41.9 and 42.2 respectively.

6.5.3.9 Within gender sub groups the highest scale mean for males was recorded by group K (50.0) and the lowest by group H (33.5).

6.5.3.10 Among females the highest scale mean was recorded by group L (52.6) and the lowest by group F (36.0).

6.5.3.11 Standard deviations also varied between groups from 12.4 (group L) to 7.1 (group G). This finding was significant at a level of $P < .01$).

6.5.3.12 Even where groups recorded similar scale means standard deviations varied. Groups K and L showed means of 47.6 and 48.2 respectively but had standard deviations of 7.5 and 12.4 (significant at $P < .05$).

6.5.3.13 Of the 12 scale items, questions 19 (specific fitness) and 24 (specific appearance) had the highest item mean (4.4).

6.5.3.14 Questions 1 (fitness) and 12 (contentment) had the lowest item mean (2.5).

6.5.3.15 Question 32 (specific worries) showed the highest correlation (.50) with the full scale.

6.5.3.16 Question 14 (appearance) had the lowest correlation (.27) with the full scale.

6.5.3.17 Question 34 (specific contentment) established the highest level of significant correlations with other items though

every correlation between scale items was positive (see 6.5.3.2 above).

6.5.3.18 When comparing each construct in its general and specific context 6 out of 6 positive correlations were shown for the CHANCE items (Table 30). Of these correlations 5 were significant at a level of $P < .001$.

Discussion

6.5.3.19 The Alpha reliability coefficient established (.76) was much higher than that of the Pilot Exercise (.60) and returned to the level established in the Prototype Exercise (.75).

6.5.3.20 The maximum positive correlations established between items together with the quality of their significance levels (see 6.5.3.3) reinforces the internal consistency finding above and justifies the re-wording and adjustments to the item pool described earlier (see 6.3.1).

6.5.3.21 Although the 12 items had all correlated positively with the full scale in the previous research phase the quality of correlations was now at a higher level. The lowest item: total scale correlation in this exercise was found to be for question 14 (.27) compared with .07 for question 4 in the Pilot Exercise. Equally the highest correlation in this phase was for question 32 (.50) compared with question 17 (.39) in the previous research.

6.5.3.22 The variation between groups again draws attention to the need for follow-up discussion of the many issues arising

from this study. Origins of beliefs may be discussed together with a consideration of alternative viewpoints including the validity of each one. In this way healthy group debate may be fostered incorporating a tolerant respect for the beliefs of peers. Simultaneously, extreme concepts can be identified at either end of the continuum which will in turn facilitate any personal counselling deemed appropriate by the teacher.

6.5.3.23 Though the scale means for males and females were very similar the latter scored slightly higher on this occasion. In the Pilot Exercise the trend was reversed though again the differential was small (see 5.6.3.6). Since both research exercises demonstrated a similar response by gender it would appear that other variables such as academic ability or success/failure experience play a more important role than gender in determining the CHANCE ideology of such adolescents.

6.5.3.24 The scale mean for the sample population in this phase was 42.1 compared with 44.6 in the Pilot Exercise. This finding would be consistent with the higher level of internality shown by pupils in the current phase (see 6.5.1.) revealing a more independent status than the slightly younger adolescents of the previous sample population.

6.5.3.25 Group H recorded the lowest scale mean for males with this scale as was also the case with the POWERFUL OTHERS scale. At the same time this sub group showed the highest score for males on the INTERNAL scale.

Group K males responded in an opposite direction to group H males, scoring lowest on the INTERNAL scale but recording the highest male sub group mean on the CHANCE scale. These were the two most outstanding examples of relationships between the scales, an issue discussed elsewhere (see 6.5.4.3 and Table 31).

6.5.3.26 It is not possible to identify a gender variable which operates in isolation from other factors. The variation in scale means recorded by sub groups of males and females meant that on occasions the gender sub group raised the tutor group mean and in other instances caused a reduction in the tutor group's score (see also 6.5.2.24).

6.5.3.27 Similarly the standard deviations varied from one tutor group to another even where groups' scale means were quite similar (see 6.5.3.12). This, allied to the variation in the scores recorded by individuals within groups, supports the case for a precise analysis of performance within tutor and gender groups. Only in this way will the trends observed from inter-group comparison be able to become operationalised into personal help and support for young people.

6.5.3.28 Sub scales for the CHANCE scale may be constructed from the 6 pairs of items representing the scale in a general and specific context. Table 30 reveals a full set of positive correlations between the items and a highly significant ($P < .001$) positive association between the sub scales.

6.5.3.29 In almost every respect the quality of correlations between items in various combinations has been developed in the latest phase. Even when comparing the constructs in a general and specific context 5 of the 6 correlations were at a level of $P < .001$ whereas in the Prototype Exercise, though all 6 correlations were positive, not 1 reached such a level.

6.5.3.30 The evidence seems to confirm a further development in the reliability of the scale to the point where it could be used as an appropriate measure of the CHANCE trait in young adolescents. Such an assertion is based upon the consistent pattern of results established in the latest research exercise rather than with regard to any one particular finding.

6.5.4 Review of the Health Locus of Control Scales

6.5.4.1 The findings described in the preceding sections support the view that the scales have been developed further as a result of the latest phase of the research programme. Although the Alpha reliability coefficient of the POWERFUL OTHERS scale decreased this was more than compensated for by the increased Alpha coefficient established for the other two scales.

6.5.4.2 In addition to the high proportion of positive correlations between items within each scale the relationship of each construct in its general and specific context also provides evidence of the scales' reliability. As already described (6.5.1.14, 6.5.2.12, 6.5.3.14) the correlations were overwhelmingly positive. TABLE 24.

6.5.4.3 The relationship between the three scales is illustrated in Table 25. Of particular interest is the finding that in 7 out of the 12 contexts the POWERFUL OTHERS and CHANCE items have a closer relationship than where either is associated with the INTERNAL item. The correlation of .35 between the full POWERFUL OTHERS scale and CHANCE scale is highly significant ($P < .001$) whereas the correlations involving the full INTERNAL scale are both negative.

6.5.4.4 The following table shows the relationship between valuation of each construct in its general and specific context.

CONSTRUCT	FIT-NESS	APPEAR-ANCE	ACCEPT-ANCE	DIS-AGREEING	WORRIES	CONTENT-MENT
CORRELATION General to specific	.35**	.24**	.16*	.64**	.40**	.43**

* P < .01
** P < .001

Those who state that fitness is very important to them (question 37) are very likely therefore to state also that a fitness test in a tutor group competition is very important to them (question 43). The results clearly indicate a high level of consistency in pupil evaluation of the constructs in both a general and specific context. In the Pilot Exercise a negative correlation was established for the "Acceptance" construct (5.6.4.2). The improvement shown confirms the success of the re-wording of these items in the planning of this latest phase.

6.5.4.5 In developing the current item pools from earlier research it was essential that the holistic nature and philosophy of the health model being used was retained. Equally it was of little benefit to pursue further reliability in one scale if this was to be at the expense of the other(s). The quality and quantity of positive relationships identified both within and between scales supports the claim that the scales have been further validated as worthy measures of the locus of control belief within the rationale upon which the

research programme was originally based. To this end it is a satisfactory stage of development which has been reached to date.

6.5.5 A Statistical Analysis Of The Components Of Each Health Locus Of Control Scale

6.5.5.1 Introduction

Each of the three health locus of control scales is composed of twelve items representing six constructs, each pair of items being phrased in a general and specific context respectively. By clustering the six 'general' items together and the six 'specific' items together this enables two further sub groups to be formed. This in turn enables the following sets of correlations within each health locus of control scale to be identified. The correlations between:

1. all twelve individual items (Tables 2, 5 and 8 refer)
2. each item and its full scale (Tables 3, 6 and 9 refer)
3. each item and its 'general' or 'specific' sub scale as appropriate (Table 13)
4. the pairs of items representing constructs (Table 14)
5. each pair of items and its full scale (Table 15)
6. the 'general' and 'specific' sub scales (Table 16)
7. the 'general' sub scale and its full scale (Table 16)
8. the 'specific' sub scale and its full scale (Table 16)

6.5.5.2 Purpose

This categorisation and analysis enables the respective contribution of each grouping to its locus of control scale to be identified. In turn this may facilitate prediction and, possibly, elimination of items from future

administration of the questionnaire. Alternately it may reveal that each category plays an essential role in the total research process and must therefore be retained in any further research or classroom application.

6.5.5.3 Results

6.5.5.3.1 Individual items (categories 1-3 in section 6.5.5.1)

The relationships established between items and also between each item and its own health locus of control scale have been described in detail in sections 6.5.1 to 6.5.3 inclusive. For the INTERNAL scale inter-item correlations ranged from -.11 to .40. For the POWERFUL OTHERS scale the range was from -.08 to .41 and for the CHANCE scale from .01 to .43. The highest inter-item correlation (.43) still means that only 18% of the variance in question 19 could be accounted for by variance in question 24 (Table 8).

With regard to the association between individual items and their full scale the correlations for the INTERNAL scale ranged from .12 to .37. For the POWERFUL OTHERS scale the range was from .12 to .26 and for the CHANCE scale from .27 to .50. This reveals that even for the highest correlation only 25% of the variation in the full CHANCE scale could be predicted from variance in question 32 (Table 9).

Finally in this section Table 13 shows that for the INTERNAL scale the correlations between individual items and their respective 'general' or 'specific' sub scales ranged from .06 to .35. For the POWERFUL OTHERS scale the range was

from .08 to .30 and for the CHANCE scale from .29 to .51. This again demonstrates that even for the highest correlation only a relatively moderate level of prediction (26%) exists between question 32 and its 'specific' sub scale (Table 13).

In general these results appear to suggest that no one individual item is of such outstanding statistical quality that it can be used as a high predictor of response to the full scale it serves. The quantity of moderately positive (up to .51) correlations is still satisfying however and leads to the conclusion that the full range of individual items should be retained.

6.5.5.3.2 Pairs of items (categories 4-5 in section 6.5.5.1)

Table 14 illustrates the correlations between each pair of items within each health locus of control scale. For the INTERNAL scale the range is from .03 to .33; for the POWERFUL OTHERS scale from -.01 to .22 and for the CHANCE scale from .25 to .51. This latter correlation (.51) means that only 26% of the variance in question 32 can be predicted from variance in question 17, both items representing 'worries' (Table 14).

With regard to the association between pairs of items and the respective full health locus of control scales (Table 15) the correlations for the INTERNAL scale ranged from .48 to .58. For the POWERFUL OTHERS scale the range was from .44 to .56 and for the CHANCE scale from .62 to .74. These

correlations are consistently higher than those established for individual items with the full scales (reflecting positive correlations between the items within each pair). The highest correlation established (.74) however still means that only 55% of the full CHANCE scale can be predicted from the combined response to questions 1 and 19 (the 'fitness' pair on the CHANCE scale - Table 15). Though clearly an improvement in 'prediction' this still leaves almost half of the CHANCE scale not accounted for in such a calculation.

Comparing and contrasting the items making up each pair is interesting insofar as it demonstrates consistent attitudes towards constructs in both contexts (Table 30). The correlations between pairs tend generally to be somewhat more positive than correlations between the individual items of each health locus of control scale. The pairs certainly reveal more positive correlations with the full scales than do the individual items though the power of prediction for each pair remains somewhat limited. This again suggests that the present item pool for each scale would be better retained than risk losing qualitative data by any elimination of items.

6.5.5.3.3 Sub scales (categories 6-8 in section 6.5.5.1)

Table 16 illustrates the relationship between the 'general' and 'specific' sub scales within each full health locus of control scale. For the INTERNAL scale a correlation of .34

was established, for the the POWERFUL OTHERS scale a correlation of .36 and for the CHANCE scale a correlation of .48. Whilst appearing to be pleasing results they still only represent at best a predicted variance of 23% in the CHANCE 'specific' subscale from the variance in the corresponding 'general' sub scale.

The association between sub scales and full scales would be expected to be relatively high since the former comprise 50% of the items of the full scales. Table 16 confirms this expectation by demonstrating correlations ranging from .80 to .87. This means that the ability to predict is considerable in every instance. The lowest correlation still enables 64% of the variance in the INTERNAL scale to be predicted from variance in the 'general' sub scale (Table 16). This level of prediction rises to 76% for the highest correlation.

Whilst this may appear to present a good case for item elimination the high correlations for each sub scale might also prove the case for retention. Partial correlation analyses reveal that the unique contribution of each sub scale to its full scale is similar.

UNIQUE CONTRIBUTION	INTERNAL	POWERFUL OTHERS	CHANCE
GENERAL SUB SCALE - FULL SCALE	35%	35%	29%
SPECIFIC SUB SCALE - FULL SCALE	41%	40%	37%
JOINT CONTRIBUTION	24%	25%	34%

By eliminating a sub scale category it would be possible to predict with some accuracy the expected full scale score. However this would cause the loss of much rich data about pupils, either of a general ideological nature or relevant to particular situations.

An interesting point is that the correlations for the 'specific' sub scales are consistently slightly more positive than their 'general' sub scale counterparts. This in turn is reflected in the unique contributions shown above. The table emphasises however that even with the highest individual unique contribution (41%) this still leaves 59% attributed to the alternative sub scale or joint contribution of both sub scales. On balance this would suggest more benefit to potential users in retaining both types of sub scales in the measuring instrument.

6.5.5.4 Discussion

The varying combinations of items used in the above analyses have all sought to identify the contribution made by constructs to the health locus of control scales. Additionally the requirement for a tripartite series of questions to represent, throughout the questionnaire, all three scales has also received attention.

No one construct has been shown to stand out significantly from others as being singularly more important or possessing outstanding levels of prediction. Similarly no pair of items or sub scale has proven without question that it could

in itself provide the same quality of data as the full scales developed in this research programme. Subsequent sections will further support the case for retaining items representing all three scales when investigating each construct (6.5.12.10, 6.5.13.9, 6.5.15.11 and 6.5.18.13). The evidence serves to identify a consistent pattern of justification for the research design, enabling further administration of the scales to be undertaken with more confidence and credibility than hitherto.

6.5.6 The SUSCEPTIBILITY Scale

Questions 49, 52, 56 and 60 refer. Correlations are shown in table 22 whilst item and scale means are illustrated in Table 20.

Results

6.5.6.1 An Alpha reliability coefficient of .38 was established for the scale.

6.5.6.2 All 6 correlations between items were positive, 2 being significant at $P < .001$.

6.5.6.3 Question 60 was the most successful in being involved in both of the significant correlations.

6.5.6.4 A correlation of .17 was established between this scale and the INTERNAL scale.

6.5.6.5 A correlation of -.08 was established between this scale and the POWERFUL OTHERS scale.

6.5.6.6 A correlation of -.22 was established between this scale and the CHANCE scale.

6.5.6.7 A correlation of .39 was established between this scale and the GOOD HEALTH scale.

6.5.6.8 A correlation of .04 was established between this scale and the NEWNESS scale.

6.5.6.9 A correlation of -.07 was established between this scale and the RISK TAKING scale.

6.5.6.10 A scale mean of 20.6 was established for the total sample compared with 21.3 in the Pilot Exercise.

6.5.6.11 Males and females scored very similarly on the scale (20.9 - 20.2 respectively).

6.5.6.12 Question 52 had the highest item mean (5.9) of the four questions.

6.5.6.13 Group F had the highest scale mean (22.0).

6.5.6.14 Group K had the lowest scale mean (18.3). A t test showed the differential with group F to be significant at $P < .001$.

Discussion

6.5.6.15 The correlations established in this phase were consistently more positive than in the earlier research programme. It would seem to indicate that a more reliable scale has now been developed which may be given to pupils in future with more confidence than hitherto.

6.5.6.16 There was very little difference between the genders in this exercise whereas females scored higher than males on previous occasions. Though gender may be a factor for consideration it is less important than other variables such as personality, peer group pressures or parental beliefs.

6.5.6.17 The significant ($P < .01$) correlation established between this scale and the INTERNAL scale replicates that of the Pilot Exercise. It further confirms a link between a tendency towards internality and an acceptance of the

association between present behaviour and its effect upon health status, either now or at a later date. Given a valuation of health and desire for internality it should follow that such pupils will act accordingly to reduce the likelihood of any threat to personal health.

6.5.6.18 Equally the negative association between this scale and the CHANCE scale suggests a rejection of a chance philosophy in favour of accepting "cause and effect". Consistency is again demonstrated in the comparison and contrast of these locus scales in their relationship with this SUSCEPTIBILITY scale.

6.5.6.19 The highly significant positive correlation between this scale and the GOOD HEALTH scale suggests a common attitude is held by pupils in their regard. It could be argued that SUSCEPTIBILITY implies a valuation of health but the items were designed to avoid any direct valuation, seeking merely to probe an acceptance of the link between current behaviour and consequences.

6.5.6.20 The variation in group scale means reinforces the need to pursue the reasons for different responses by groups and by individual pupils within groups who score at the various points on the scale's continuum.

6.5.7 The NEWNESS Scale

Questions 55 and 59 refer. Correlations between items are shown in table 18 whilst item and scale means are illustrated in Table 17.

Results

6.5.7.1 A significant correlation of .30 ($P < .001$) was established between the two items, giving an Alpha reliability coefficient of .46.

6.5.7.2 A correlation of .15 was established between this scale and the INTERNAL scale.

6.5.7.3 A correlation of .01 was established between this scale and the POWERFUL OTHERS scale.

6.5.7.4 A negative correlation of -.22 was established between this scale and the CHANCE scale.

6.5.7.5 A correlation of .26 was established between this scale and the GOOD HEALTH scale.

6.5.7.6 A scale mean of 9.9 was obtained for the full sample compared with 10.6 in the Pilot Exercise.

6.5.7.7 The scale means for males and females were almost identical at 9.9 and 10.0 respectively.

6.5.7.8 There was very little variation in the scale means of the groups, the highest being group G (10.7) and the lowest recorded by group O (9.0).

6.5.7.9 The two scale items had very similar means (4.9 and 5.1).

Discussion

6.5.7.10 The very much improved association between the items is an indication of the successful re-wording of item 55 as suggested in the previous report (see 5.6.7.9). Bearing in mind the larger sample population in this exercise the correlation proved highly significant.

6.5.7.11 Very few differences between gender or tutorial groups were apparent in the analysis of scale means. This may be partly due to the mixed ability composition of groups as well as the relatively small number of scale items. Nonetheless an examination of individual pupil's responses would still reveal variation in belief and again provide an opportunity for appropriate counselling and personal support to be given.

6.5.7.12 The higher positive association between this scale and INTERNALITY than with the other two locus of control scales replicates a similar finding in the Pilot Exercise. It may be that 'internal' adolescents are more prepared to seek out new experiences in order to understand their world and themselves that much better. This pursuit of information is an acknowledged characteristic of those individuals high on internality (Phares 1976). The significant negative relationship of this scale with the CHANCE scale could be perceived as supporting this notion. Far better of course for those in close contact with young adults to follow up

such hypotheses in order to learn more about their students and thus be able to contribute more meaningfully to their development.

6.5.7.13 The significant positive correlation between this scale and the GOOD HEALTH scale could create a dilemma for certain forms of new experiences (e.g. drugs misuse) may well be detrimental to health. It may be that further specificity is required in the wording of this sub scale's items in order to differentiate between new experiences perceived as beneficial (e.g. learning more about personal skills and capabilities) and other experiences seen as involving a greater element of risk (e.g. motor cycling).

6.5.7.14 The question of precisely which new experiences are pursued may vary with personality and locus of control type. Internal pupils may pursue new experiences related to their previous successes (e.g. academic, sporting). External types may be attracted to new experiences where a greater element of chance or unknown outcome is present. This research programme did not differentiate between such varying experiences. Further investigation in this field would benefit from taking these considerations into account.

6.5.8 The GOOD HEALTH Scale

Questions 50, 51, 54 and 57 refer. Correlations between items are shown in table 19 whilst item and scale means are illustrated in Table 17.

Results

6.5.8.1 Questions 50, 51 and 54 all correlated positively with each other at a significant level.

6.5.8.2 Question 57 showed a negative correlation with each of the other items (see 6.5.8.12).

6.5.8.3 With all four items included on Alpha reliability coefficient of -.15 was recorded.

6.5.8.4 With question 57 omitted on Alpha reliability coefficient of .35 was recorded.

6.5.8.5 Question 54 showed the highest item mean (5.8) and question 57 the lowest (2.5).

6.5.8.6 Females had a slightly higher scale mean (16.9) than males (16.2).

6.5.8.7 The highest scale mean was recorded by group C (17.9) and the lowest by group O (15.4).

6.5.8.8 Groups G and H demonstrated the largest discrepancy between groups from the same school. A T test revealed the difference in scale means (17.8 - 15.5) to be significant at a level of $P < .03$).

6.5.8.9 A correlation of .16 was established between this scale and the INTERNAL scale.

6.5.8.10 A correlation of -.02 was established between this scale and the POWERFUL OTHERS scale.

6.5.8.11 A correlation of -.29 was established between this scale and the CHANCE scale.

Discussion

6.5.8.12 Question 57 clearly stands out as an exception in this scale with its negative correlations. This finding is due to an error of scoring which should have been applied to responses in a reverse manner (i.e. 1 to 7 from "strongly agree" to "strongly disagree"). Since the error was only noticed following computerisation its amendment has proven difficult. However, an alternative Alpha has been calculated with question 57 deleted and this gives a more accurate representation of the scale. Correlations quoted between this scale and other scales refer to this amended version of the GOOD HEALTH scale.

6.5.8.13 Question 50 certainly proved successful in its replacement of the original item (see 5.6.8.8.) and established significant correlations with other items.

6.5.8.14 Females again scored slightly higher than males as in the Pilot Exercise. Though this may be perceived as a gender variable alone it was found in earlier research that it is specific gender sub-groups within academic groups who show

particularly high and low tendencies in this dimension. It is therefore necessary to pursue the intra-group response in addition to inter-group analysis.

6.5.8.15 A significant positive relationship was demonstrated between the GOOD HEALTH and INTERNAL scale. At the same time a significant negative correlation was established with the CHANCE scale. Both findings replicate the outcome of the previous phase of research with the correlations being even more conclusive in the current exercise. The proposal that a valuation of health is accepted moreso by those with high levels of internality is supported by these results. In addition the significant positive relationship between the GOOD HEALTH and SUSCEPTIBILITY scales (see 6.5.7.7) confirms the finding of other researchers (Phares 1976) that those with higher levels of internality are more prepared to accept the future consequences of present actions. This proposition is further confirmed by the high positive correlation between the SUSCEPTIBILITY and INTERNAL scales (see 6.5.7.4).

6.5.8.16 The significant discrepancy between the scale mean of two groups from the same school raises many questions (6.5.9.8). Are there any particular sub-groups (e.g. gender) or cliques responsible for the findings? Is it a reflection upon the pupils' lives or school experience? To what extent can or should attempts be made by teachers to influence these beliefs? Considerable thought should be given to policy development in this aspect of schooling if a meaningful

contribution is to be made to the personal development of young people whose views are typical of those represented in the present research programme.

6.5.9 The RISK TAKING Scale

Questions 53 and 58 refer. Correlations are shown in table 21 whilst item and scale means are illustrated in Table 20.

Results

6.5.9.1 A significant positive correlation ($P < .001$) of .54 was established between the two items.

6.5.9.2 An Alpha reliability of .70 was established for the scale.

6.5.9.3 A correlation of .10 was established between the RISK TAKING scale and the INTERNAL scale.

6.5.9.4 A correlation of .07 was established between the RISK TAKING scale and the POWERFUL OTHERS scale.

6.5.9.5 A correlation of .08 was established between the RISK TAKING scale and the CHANCE scale.

6.5.9.6 A correlation of -.07 was established between this scale and the SUSCEPTIBILITY scale.

6.5.9.7 A correlation of -.07 was established between this scale and the GOOD HEALTH scale.

6.5.9.8 A correlation of .17 was established between this scale and the NEWNESS scale.

6.5.9.9 Males scored slightly higher than females on both items.

6.5.9.10 The highest scale mean was recorded by group 0 (11.8).

6.5.9.11 The lowest scale mean was recorded by group N (8.3). Both group N and group O came from the same school. A T test confirmed that this was a significant differential ($P < .001$).

6.5.9.12 The total scale mean was 9.7 compared with 8.6 in the Pilot Exercise.

Discussion

6.5.9.13 The positive relationship between the two items reinforced the findings of the Pilot Exercise and again confirmed the success of the re-wording carried out to items at that stage of the programme.

6.5.9.14 No academic ability could be introduced into the analysis due to the mixed ability structure of groups. However the significant difference between certain groups (such as N and O) again suggests the need to pursue the antecedents of these beliefs and encourage re-consideration by pupils based upon the relative merits of each case.

6.5.9.15 No significant relationship was established between the RISK TAKING scale and any of the LOCUS OF CONTROL scales. This was somewhat disappointing insofar as the Pilot Exercise had shown a significant negative association between the INTERNAL scale and RISK TAKING scale (5.6.5.9).

6.5.9.16 The finding that males scored higher than females confirmed a similar trend in all three phases of the research. Expressing a valuation of risk taking (and behaving in such

a manner) is one way in which males may choose to demonstrate masculinity or fulfil expectations of themselves in life.

6.5.9.17 The lack of a negative association between this scale and the INTERNAL scale may indicate that even those pupils with a tendency towards internality are still attracted, at this stage of development, towards risk taking behaviours.

6.5.9.18 The negative association established between the RISK TAKING and SUSCEPTIBILITY scales was identical to that established with the GOOD HEALTH scale. This would suggest that those pupils more willing to rate risk taking behaviour value good health somewhat less than others whilst also not accepting the increased likelihood of health being threatened by certain behaviours. Taken together the outcome is an increased involvement in activities likely to damage health.

6.5.9.19 The RISK TAKING scale was positively associated with the NEWNESS scale at a significant ($P < .001$) level (see 6.5.9.8). This appears to imply that those who rate risk taking behaviours also postively value new experiences. However it probably depends upon the type of risks and new experiences since the two scales do not show a similar 'joint' association with either the GOOD HEALTH or SUSCEPTIBILITY sub scales. Their relationship would thus appear to depend upon the particular type of risk or new experience presenting to pupils (see also 6.5.7.13).

6.5.10 Review of the Sub Scales

The following table illustrates the relationship established between each of the sub scales and the health locus of control scales.

	RISK	NEWNESS	SUSCEPTIBILITY	GOOD HEALTH
RISK TAKING	1.0			
NEWNESS	.17	1.0		
SUSCEPTIBILITY	-.07	.04	1.0	
GOOD HEALTH	-.07	.26	.39	1.0
INTERNAL	.10	.15	.17	.1
POWERFUL OTHERS	.07	.01	-.08	-.0
CHANCE	.08	-.22	-.22	-.2

6.5.10.1 As described in earlier sections, the sub scales may be clearly grouped together with RISK TAKING being positively associated with NEWNESS and GOOD HEALTH being allied to SUSCEPTIBILITY.

6.5.10.2 However it should be emphasised that further investigation reveals the need for additional information. Whereas NEWNESS correlates positively with GOOD HEALTH it has a much less positive relationship with SUSCEPTIBILITY. RISK TAKING, on the other hand, relates equally negatively with GOOD HEALTH and SUSCEPTIBILITY. It is suggested that the phrase "new experiences" in questions 55 and 59 may well be perceived quite differently from one pupil to another and as a result be associated with both positive and negative health implications. Teachers are in an ideal position to

pursue such ambiguities in order to clarify pupil interpretations and evaluations of the various constructs being studied. Such an exercise would also enable any counselling or discussion of belief systems to be undertaken with pupils as considered appropriate at the time.

6.5.10.3 The INTERNAL scale is clearly associated in a positive direction with all four sub-scales. Whether this reflects a rationalisation process in order to construct a relationship with other concepts or a wish to give socially desirable answers is unclear. A number of items are phrased negatively to avoid any response set tendency by pupils. The positive association with RISK TAKING is particuarly intriguing since a high negative correlation was established in the Pilot Exercise. It may, of course, reflect upon definitions of "risk". However the finding is unusual and clearly requires further study.

6.5.10.4 The POWERFUL OTHERS scale aligned itself positively to the RISK TAKING and NEWNESS sub scales and negatively to the GOOD HEALTH and SUSCEPTIBILITY sub scales. None of these findings were at a significant level but they further reinforce the assocation between these sub scales described earlier. The external tendency of the POWERFUL OTHERS scale may be perceived as disputing the effect of personal behaviour upon subsequent events (hence the negative correlation with SUSCEPTIBILITY) and the willingness to take risks (shown by the positive correlation with the RISK TAKING scale).

6.5.10.5 The RISK TAKING scale was strongly associated, in a positive direction, with the CHANCE scale. This supported a similar finding for its relationship with the POWERFUL OTHERS scale suggesting again the combination of these locus scales into an external tendency.

6.5.10.6 The other three sub scales however were all negatively associated with CHANCE to a significant ($P < .001$) extent. This would seem quite logical with regard to SUSCEPTIBILITY and GOOD HEALTH both of which imply a rejection of chance events and an acceptance of "cause and effect".

6.5.10.7 Whilst the negative correlation between NEWNESS and CHANCE may seem unusual it does accord with the positive association between NEWNESS and INTERNAL (see 6.5.7.12). Those pupils with a tendency towards internality may still seek new experiences of a certain type whilst those pupils displaying a CHANCE philosophy may not particularly want to be exposed to new experiences over which they feel they have little control.

6.5.11 The FITNESS Construct

The general FITNESS construct is represented by questions (items) 1, 7 and 13 and the specific FITNESS construct is represented by questions 37 and 43 respectively.

Correlations between items are shown in Table 24 and individual item means in Tables 1, 4 and 7. The relationship between the scale items in a general and specific context is shown in Table 30.

The General Construct

6.5.11.1 A significant ($P<.001$) negative correlation was established between the CHANCE item and the INTERNAL item.

6.5.11.2 A significant ($P<.001$) positive correlation was established between the CHANCE and POWERFUL OTHERS item.

6.5.11.3 A significant ($P<.001$) positive correlation was established between the valuation of this construct and the INTERNAL item.

The Specific Construct

6.5.11.4 A significant ($P<.001$) negative correlation was established between the INTERNAL item and each of the POWERFUL OTHERS and CHANCE items.

6.5.11.5 A signficant ($P<.001$) positive correlation was established between the POWERFUL OTHERS item and the CHANCE item.

6.5.11.6 The valuation of this construct was associated positively with each scale item but not to a significant level.

Discussion

6.5.11.7 The findings demonstrate a clear division between internality and the other scales both in the general and specific context. It also emphasises the very close association between the CHANCE and POWERFUL OTHERS scales, supporting the view that they do indeed arise from an external tendency in people. These relationships are even more clearly defined in this phase than in the Pilot Exercise.

6.5.11.8 The high level of positive correlations between the INTERNAL items and a valuation of the construct replicates the findings of the Pilot Exercise. This suggests that the tendency towards internality in this aspect of health is indeed accompanied by a greater valuation being placed upon the construct.

6.5.11.9 A consistent attitude towards FITNESS is revealed by the high (.35) correlation between the items (37 and 43) representing valuation in the general and specific context. Furthermore it would appear to indicate a reasonably high measure of validity in terms of pupils' responses.

6.5.11.10 The improved quality of correlation established between items in the general construct demonstrates the value of rewording question 7 as recommended earlier (see 5.6.9.12).

6.5.11.11 Table 30 reveals a high level of consistency between the FITNESS beliefs in a general and specific context. For all three scales it can be seen that a similar attitude is held

about the fitness construct irrespective of which tendency pupils express.

6.5.12 The APPEARANCE Construct

The general APPEARANCE construct is represented by questions (items) 2, 8 and 14 and the specific APPEARANCE construct by questions 22-24. The valuation of each construct is represented by questions 38 and 44 respectively.

Correlations between items are shown in Table 25 and individual item means in Tables 1, 4 and 7. The relationship between the scale items in a general and specific context is shown in Table 30.

The General Construct

6.5.12.1 The INTERNAL item correlated negatively with the POWERFUL OTHERS and CHANCE items. In the former case the association was at a significant ($P<.01$) level.

6.5.12.2 A significant ($P<.001$) positive correlation was established between the POWERFUL OTHERS and CHANCE items.

6.5.12.3 A significant ($P<.001$) positive association was found between a valuation of the construct and the INTERNAL item.

The Specific Construct

6.5.12.4 A signficant ($P<.001$) negative correlation was established between the INTERNAL item and the POWERFUL OTHERS item.

6.5.12.5 A positive association was found between the INTERNAL and CHANCE items.

6.5.12.6 A negative relationship was shown to exist between the POWERFUL OTHERS and CHANCE items.

6.5.12.7 A significant ($P<.01$) positive correlation was established between a valuation of the construct and the POWERFUL OTHERS item.

Discussion

6.5.12.8 A very close relationship was again found to exist between the two items representing the POWERFUL OTHERS and CHANCE scales. This offers further support for the suggestion of an external tendency existing from which both these scales arise (see 6.5.11.7).

6.5.12.9 The valuation of the general construct was closely associated with the INTERNAL item as it was in the Pilot Exercise.

6.5.12.10 However this was not the case for the specific construct where the POWERFUL OTHERS item established a high positive correlation with a valuation of the construct. Whilst total consistency may be desirable in many respects, this finding emphasises the need to retain all the items in the questionnaire rather than only include one item for each construct as is the case with other research in the field.

6.5.12.11 This proposal is further supported by the finding that the INTERNAL and CHANCE items established a positive relationship (6.5.12.5) in one instance whilst on another occasion a negative correlation was found between the POWERFUL OTHERS and CHANCE items. Therefore whilst trends may be identified it is still necessary to retain the full range of

questions for each construct in its general and specific context since prediction from one item alone cannot be wholly accurate.

6.5.12.12 The pattern of correlations is very similar in this phase to the preceding Pilot Exercise. Even the unusual alliance between the INTERNAL and CHANCE items was replicated (6.5.12.5 and 5.6.10.5) as was the association between POWERFUL OTHERS and CHANCE (6.5.12.6 and 5.6.10.5) suggesting that the scales accurately reflect the existing situation. This again supports the case for retaining the full range of questions in any future administration of the scales.

6.5.12.13 The re-wording of certain items (see 5.6.10.7) appears to have been successful in contributing to more precise discrimination between items by developing correlations in either a positive or negative direction.

6.5.12.14 The significant positive correlation between the valuation items (questions 38 and 44) reflects a consistent attitude being shown by pupils towards the construct in both its general and specific context. Whilst the association supports the view of a common attitude it is not of sufficient magnitude to justify the elimination of either item. Rather it demonstrates the need for both contexts to be retained if a truly accurate record of locus of control beliefs is to be compiled.

6.5.12.15 The relationship between the scale items in a general and specific context was not as positive as in the Pilot

Exercise for this construct. Since the questions were almost identical in both phases it is not easy to suggest a reason for this outcome. It would be reasonable to point out the very real difference between the general and specific questions but this was also the case with the earlier research. Further administration of the scales would help in determining whether further re-wording of the items is necessary.

6.5.13 The ACCEPTANCE BY FRIENDS Construct

The general ACCEPTANCE construct is represented by questions (items) 3, 9 and 15 and the specific construct by questions 25-27. The valuation of each construct is represented by questions 39 and 45 respectively.

Correlations between items are shown in Table 26 and individual item means in Tables 1, 4 and 7. The relationship between the scale items in a general and specific context is shown in Table 30.

The General Construct

6.5.13.1 The INTERNAL item established a negative association with the POWERFUL OTHERS item and a positive correlation with the CHANCE item.

6.5.13.2 The CHANCE item was positively associated with the POWERFUL OTHERS item.

6.5.13.3 All three scale items correlated positively with a valuation of the construct. The relationship with the INTERNAL item was at a signficant ($P<.01$) level.

The Specific Construct

6.5.13.4 The INTERNAL item correlated negatively with both the POWERFUL OTHERS and CHANCE items. The latter relationship was at a significant ($P<.001$) level.

6.5.13.5 A significant ($P<.01$) positive correlation was established between the POWERFUL OTHERS and CHANCE items.

6.5.13.6 Valuation of the construct was associated positively with the INTERNAL item at a significant ($P<.001$) level.

6.5.13.7 The POWERFUL OTHERS and CHANCE items were negatively associated with a valuation of the construct, the relationship with CHANCE being at a significant ($P<.001$) level.

Discussion

6.5.13.8 A strong association between CHANCE and POWERFUL OTHERS was again apparent in this exercise in both contexts, as it was in the Pilot Exercise. This finding further supports the notion of an external ideology being present as a tendency in many people.

6.5.13.9 Internality was clearly associated negatively with a dependency on POWERFUL OTHERS with regard to this construct. Its relationship with CHANCE however fluctuated in both directions demonstrating yet again that health locus of control beliefs cannot be predicted with assurance without retaining questions representing all three scales.

6.5.13.10 The valuation of this construct was positively associated with both of the INTERNAL items. This suggests that those who feel that friendship patterns are within their sphere of control or influence simultaneously rate the construct of ACCEPTANCE more highly than fellow pupils. This finding does not indicate whether the association is "cause and effect", eclectic or related to other variables. Further enquiry by teachers involved in such work would enable the

possibilities to be explored, clarified and incorporated into future teaching strategies.

6.5.13.11 The correlations established between items representing the construct in its general and specific context (Table 30) improved considerably compared with the situation in the Pilot Exercise. Whereas two out of three correlations had previously been negative, all three in the current research were positive (two being at a significant level). This finding recognises the existence of consistency in health locus of control belief and suggests that pupils are revealing their true feelings in the responses given.

6.5.14 The DISAGREEING WITH FRIENDS Construct

The general DISAGREEING construct is represented by questions (items) 4, 10 and 16 and the specific construct by questions 28-30. The valuation of each construct is represented by items 40 and 46 respectively. Correlations are shown in Table 27 and individual item means in Tables 1, 4 and 7.

The relationship between the scale items in a general and specific context is shown in Table 30.

The General Construct

6.5.14.1 The CHANCE item showed a slightly negative correlation with both the POWERFUL OTHERS and INTERNAL items.

6.5.14.2 The INTERNAL item correlated positively with the POWERFUL OTHERS item.

6.5.14.3 Valuation of the construct was significantly ($P<.001$) associated positively with the INTERNAL item and slightly positively with the other two items.

The Specific Construct

6.5.14.4 All the items established a negative correlation (not significant) with each other.

6.5.14.5 Valuation of this construct was positively associated ($P<.001$) with the INTERNAL item.

Discussion

6.5.14.6 Since the construct had been changed from AGREEING to DISAGREEING WITH FRIENDS it was expected that certain results would now be somewhat different from earlier research. The CHANCE item did not assume its customary association with POWERFUL OTHERS in either context suggesting that a joint dependency involving this construct does not exist. Similarly the INTERNAL item established an unusual positive correlation with the POWERFUL OTHERS item in the general context.

6.5.14.7 Clearly the relationship between the items requires further thought and consideration. However when comparing each scale item in its general and specific context (Table 30) a set of very high positive correlations was obtained (improving considerably upon the earlier research).

6.5.14.8 Furthermore, when comparing each item of this construct with its full scale (Table 10) high positive correlations were apparent. This suggests that the DISAGREEING items are quite appropriate when considered as part of their item pool but do not reveal particularly sharp differences when contrasted with each other across the scales.

6.5.14.9 The valuation of this construct was more highly regarded by those pupils demonstrating an internal trait. This would appear logical since those who do not wish to disagree with friends (or prefer to accept the opinions of friends) are less likely to state that disagreeing is important to them.

6.5.14.10 A high degree of consistency was shown in the association between a valuation of this construct in a general and specific context. Irrespective of the level of locus of control a very similar belief was held about DISAGREEING WITH FRIENDS by all pupils in the various circumstances presented to them.

6.5.15 The SORTING OUT WORRIES Construct

The general WORRIES construct is represented by questions (items) 5, 11 and 17 and the specific construct by questions 31-33. The valuation of each construct is represented by questions 41 and 47 respectively. Correlations are shown in Table 28 and individual item means in Tables 1, 4 and 7.

The relationship between the scale items in a general and specific context is shown in Table 30.

The General Construct

6.5.15.1 The INTERNAL item established a significant ($P<.001$) negative correlation with the POWERFUL OTHERS item.

6.5.15.2 The CHANCE item showed a positive correlation with each of the other two items.

6.5.15.3 Valuation of the construct was associated positively with the INTERNAL and POWERFUL OTHERS items and negatively with the CHANCE item.

The Specific Construct

6.5.15.4 The INTERNAL item established a significant ($P<.001$) negative correlation with the POWERFUL OTHERS item.

6.5.15.5 The CHANCE item showed a positive correlation with each of the other two items.

6.5.15.6 Valuation of the construct was associated positively with the INTERNAL item at a significant ($P<.001$) level.

Discussion

6.5.15.7 The results of the inter-item analyses above are almost identical for the general and specific constructs. This would seem to suggest an acceptable design feature as well as a consistent pattern of beliefs being held and expressed by the sample population.

6.5.15.8 The strong negative association between the INTERNAL and POWERFUL OTHERS scales replicated the findings of the Pilot Exercise, as did virtually all the other results. It indicates that whilst dependency upon other people is sharply differentiated from internality the value (or usefulness) of CHANCE is still accepted by pupils displaying both other traits (see 6.5.15.2 and 6.5.15.5).

6.5.15.9 Again the valuation factor associated itself powerfully with those revealing an INTERNAL tendency as was partly the case in the previous research phase. Whether this implies that "externals" rationalise by devaluing the construct is debatable but well worthy of further investigation.

6.5.15.10 Consistency (and reliability) is demonstrated by the high positive correlation between the valuation of the construct in both contexts. This is supported by the positive correlations between scale items representing each construct in its general and specific context (Table 30).

6.5.15.11 The finding that CHANCE items are allied to INTERNAL items to a greater extent than to POWERFUL OTHERS items is further

support for the retention of all three question options with each construct. The richness and complexity of human thought and behaviour may reveal patterns but resist strongly most attempts at total prediction.

6.5.16 The CONTENTMENT Construct

The general CONTENTMENT construct is represented by questions (items) 6, 12 and 18 and the specific construct by questions 34-36. The valuation of each construct is represented by questions 42 and 48 respectively. Correlations are shown in Table 29 and individual item means in Tables 1, 4 and 7. The relationship between the scale items in a general and specific construct is shown in Table 30.

The General Construct

6.5.16.1 The CHANCE item was positively associated with the POWERFUL OTHERS and INTERNAL items.

6.5.16.2 The INTERNAL item was negatively associated with the POWERFUL OTHERS item.

6.5.16.3 The valuation of this construct correlated negatively with the POWERFUL OTHERS and CHANCE ($P<.001$) items.

6.5.16.4 A slightly positive correlation was established between the valuation and INTERNAL items.

The Specific Construct

6.5.16.5 The CHANCE item was associated positively with the INTERNAL and POWERFUL OTHERS items.

6.5.16.6 A negative correlation was estabished between the INTERNAL and POWERFUL OTHERS items.

6.5.16.7 Valuation of this construct was shown to be positively related to each of the locus of control scale items.

Discussion

6.5.16.8 The relationship between the three items was extremely similar in the general and specific context, suggesting a considerable degree of consistency in the attitudes of pupils.

6.5.16.9 This proposition is further supported by a high positive correlation ($P < .001$) being established between the items representing the valuation of this construct in both contexts.

6.5.16.10 A feature of the findings is the relative absence of any significant correlations, positive or negative, between the scale items in both contexts. Though this is consistent in applying to both the general and specific constructs it may represent a design weakness. For instance, the cause of "something good happening" may need to be more clearly defined in order to elicit stronger feelings from pupils and hence greater discrimination between opposing beliefs.

6.5.16.11 Though the inter-item correlations across scales were relatively insignificant, the same could not be said for the inter-item correlations within locus of control scales. With regard to this construct a strong degree of consistency ($P < .001$) in attitude in both contexts was demonstrated (Table 30) for all three scales.

6.5.17 Review of the Constructs

6.5.17.1 The findings described and discussed in sections 6.5.1 to 6.5.16 confirm that the re-wording of items has been successful in developing the scales as valid and reliable indicators of health locus of control. Given that the constructs represent three major dimensions of health the scales may be perceived as being a more accurate reflection of current health ideology than other scales based very much upon a medical model of health.

6.5.17.2 Table 30 clearly demonstrates a consistent pattern of beliefs being revealed by pupils towards each construct both in its general and specific context. The positive association is almost unanimous (with one exception) suggesting a high degree of reliability existing rather than a high level of error response. It would be extremely unlikely that such a pattern could emerge from invalid responses being made consistently by a sufficiently large proportion of the sample population.

6.5.17.3 Table 31 illustrates the relationship between the three items representing each construct. The table shows that the negative relationship between items representing the INTERNAL and POWERFUL OTHERS scales has intensified since the Pilot Exercise (Table 17 of section 5.6). The association between the items representing the INTERNAL and CHANCE scales remains equally negative as in the earlier phase. Similarly the items representing the CHANCE and

POWERFUL OTHERS scales show the same set of positive correlations as in the Pilot Exercise.

6.5.17.4 Though these trends are clearly apparent there are a number of exceptions which support the case for retaining all three question options with regard to each construct. The level of prediction is not sufficiently high to eliminate with confidence the alternative questions on each construct.

6.5.17.5 There is no reason to believe that the constructs are not meaningful issues to the young people for whom the scales have been designed. No comments have been received which in any way question the positive feedback obtained in earlier research regarding the valuation of these constructs. Further details of such valuation are given in the following section.

6.5.18 The Valuation of Constructs

Questions 37 and 48 refer. Individual item means are shown in Table 32 whilst correlations with locus of control scale items are illustrated in Table 33.

Results

6.5.18.1 The tendency towards "internality" was positively associated with a valuation of the construct in 11 out of 12 cases (Table 33).

6.5.18.2 The tendency towards a "powerful others" ideology was positively associated with a valuation of the construct in 10 out of 12 cases.

6.5.18.3 The tendency towards a "chance" philosophy was positively associated with a valuation of the construct in 6 out of 12 cases.

6.5.18.4 When comparing the valuation of each construct in its general and specific context the following correlations were established:

FITNESS	APPEARANCE	ACCEPTANCE	DISAGREEING	SORTING OUT WORRIES	CONTENTMENT
.35**	.24**	.16**	.64**	.40**	.43**

** $p < .001$

All six constructs therefore showed a significant ($P < .001$) positive correlation between the pair of valuation items associated with them.

6.5.18.5 Of the 12 items 11 had a mean score of 5.3 or above.

6.5.18.6 The one exception was question 43 (specific fitness) which had a mean of 3.8.

6.5.18.7 The highest mean score (6.4) was attributed to question 42 (general contentment).

Discussion

6.5.18.8 There is a strong tendency for all three locus of control traits to be accompanied by a simultaneous valuation of the construct. This may reflect a rationalisation process or merely a simple valuation of each construct presented.

6.5.18.9 Since the tendency towards "chance" has a lower rate of positive evaluation (6.5.18.3) this may mean that such individuals see less opportunity for influencing the construct and therefore devalue it accordingly. The other two tendencies offer scope for a measure of control to be exerted.

6.5.18.10 The variation of the correlations in Table 33 is interesting. With regard to FITNESS the "internal" tendency is positively associated with a high valuation particularly in the general context. The APPEARANCE construct shows a significant positive association with "internality" in the general context and "powerful others" in the specific context. These findings are very similar to those in the Pilot Exercise (see 5.6.16.9).

6.5.18.11 Both the ACCEPTANCE BY FRIENDS and DISAGREEING WITH FRIENDS constructs are characterised by a series of significant

positive correlations between "internality" and a valuation of the constructs. This is in contradiction to the previous research which identified an association with "powerful others" (see 5.6.16.9). One important factor may be the modification to the construct DISAGREEING WITH FRIENDS which was formerly AGREEING WITH FRIENDS, now making it a stronger statement of intent in the direction of "internality".

6.5.18.12 The SORTING OUT WORRIES construct shows a significant positive association with "internality" in the specific context, as was the case in the Pilot Exercise. Both relationships with "chance" are in a negative direction though not at a level of significance.

6.5.18.13 The CONTENTMENT construct is significantly related to a "chance" tendency in a negative direction. It is somewhat suprising that a stronger positive association was not therefore established with "internality" (.01). However, this again reinforces the need to examine each item on its own merits and not assume that an outcome with one item will automatically cause an opposing effect with an item of an alternative scale.

6.5.18.14 Although the relationship between the three health locus of control scales and the valuation of constructs does vary, the correlations between a valuation of each construct in a general and specific context are highly consistent and significant (see 6.5.18.4). This suggests that pupils have not only given valid responses but also recognise the rela-

tionship between the contexts deployed and apply similar criteria to their evaluation.

6.5.18.15 The level at which constructs are valued (see 6.5.18.5 - 6.5.18.7 above) suggests that the constructs used in this research programme are relevant to young people. A low level of valuation would have diminished motivation of respondents as well as undermined the validity of the findings.

6.5.18.16 The modification to the specific ACCEPTANCE BY FRIENDS item (as recommended in 5.6.16.12) has been highly vindicated by these results. The item mean, in terms of its valuation, rose from 2.5 in the Pilot Exercise to 5.7 in this latest phase. In addition the correlation between the two valuation items representing this construct changed from -.003 to .16 confirming an improvement in reliability as well as greater relevance to the young people involved.

6.5.19 Conceptualisation of Health

This category is represented by questions (items) 61 to 74. Item means are shown in Table 34 and correlations between items in Table 35.

Results

6.5.19.1 All 91 correlations were found to be positive, 71 at a significance level of $P < .001$ and a further 10 at a significance level of $P < .01$. An Alpha reliability coefficient of .87 was established for this sub scale.

6.5.19.2 Items 61, 64, 69 and 73 recorded the highest mean score (5.9).

6.5.19.3 Item 68 recorded the lowest mean score (3.7).

6.5.19.4 The 'achievement' item (71) was not perceived as a health concept to any significant extent (mean = 4.8).

6.5.19.5 The "social" items (62, 66 and 70) showed significant ($P < .001$) correlations in all cases with each other.

6.5.19.6 The "prescriptive" items (63 and 68) again recorded the lowest item means (4.0 and 3.7 respectively) as in earlier research.

6.5.19.7 The "positive" mental health concepts (64, 67, 69 and 73) all scored very highly.

6.5.19.8 The "negative" mental health concept (72) revealed a relatively low mean score (4.8).

6.5.19.9 Items 61 ("being fit") and 65 ("not having an illness or disease") again scored highly as in the Pilot Exercise (means of 5.9 and 5.6 respectively).

Discussion

6.5.19.10 The correlations established between items, together with the Alpha coefficient, reflects considerable consistency in the responses to this sub scale. This may indicate a multi-dimensional perception of health being held by the sample population. A response set tendency may also exist but this is somewhat discounted as a result of the consistencies found between this research and earlier phases (see 6.5.19.6 and 6.5.19.9).

6.5.19.11 The low mean scores recorded by items 63 and 68 demonstrate a rejection of the prescriptive concept of health. This finding reinforces a very similar response in both the Prototype and Pilot Exercises (4.7.8.4 and 5.6.16.10).

6.5.19.12 The social concept of health was again accepted as legitimate by the sample population. This may well reflect upon the value attached by young adults to interpersonal relationships for this is a time of growing self awareness and a strong desire, by many, for peer group approval.

6.5.19.13 As with earlier research the positive mental health items scored higher than the negative mental health one (6.5.19.7 and 6.5.19.8). This may motivate young people to adopt a philosophy (and lifestyle) which seeks to attain such

satisfaction rather than simply strive to avoid (or deny) anxiety. The former gives rise to a more vigorous approach to life, causing people to "make things happen" rather than pursue a negative strategy of escapism. The following section will examine the extent to which such pre-suppositions are valid by correlating the respective mental health components with internality (since this characteristic is associated by definition with "making things happen").

6.5.19.14 Though the social and positive mental health perceptions were well recognised by pupils this was not at the expense of traditional concepts such as "being fit" and "not having an illness or disease" (see 6.5.19.9). This would suggest that a multi-dimensional conceptualisation of health is accepted by the sample population rather than any narrow and restricted perception existing. This finding once again replicates that of earlier phases (see 5.6.16.17 and 4.7.8.3).

6.5.20 Health Conceptualisation and Locus of Control

A further area for investigation is the association between an individual's perception of health and his (her) health locus of control. This may be studied by comparing the responses of items 61-74 with the same person's scores on the three locus of control scales in items 1-36.

The 14 concepts identified in items 61-74 may be categorised as follows:

i) medical (items 61 and 65)
ii) prescriptive (items 63, 68 and 74)
iii)social (items 62, 66 and 70)
iv) achievement (item 71)
v) positive mental (items 64, 67, 69 and 73)
vi) negative mental (item 72)

Table 36 illustrates the correlation between each item and the health locus of control scales. Table 37 shows the correlations between each category of concepts and health locus of control scales.

Results

6.5.20.1 The 14 concepts recorded 13 positive (and 1 negative) correlations with the INTERNAL scale. Three of the positive correlations were at significant ($P < .01$) level.

6.5.20.2 The 14 concepts established 14 positive correlations with the POWERFUL OTHERS scale, 8 being at a significant ($P < .01$) level.

6.5.20.3 The 14 concepts recorded 10 positive (and 4 negative) correlations with the CHANCE scale. Of the positive correlations 4 were at a significant ($P < .01$) level.

6.5.20.4 The MEDICAL category correlated positively ($P < .001$) with the INTERNAL scale, positively with the POWERFUL OTHERS scale but negatively with the CHANCE scale.

6.5.20.5 The PRESCRIPTIVE category correlated positively with the INTERNAL scale, POWERFUL OTHERS scale ($P < .001$) and the CHANCE scale.

6.5.20.6 The SOCIAL category correlated positively with the INTERNAL scale, the POWERFUL OTHERS scale ($P < .001$) and the CHANCE scale ($P < .001$).

6.5.20.7 The ACHIEVEMENT category correlated positively with the INTERNAL scale, the POWERFUL OTHERS scale ($P < .01$) and the CHANCE scale ($P < .01$).

6.5.20.8 The POSITIVE MENTAL category correlated positively with the INTERNAL scale ($P < .01$), the POWERFUL OTHERS scale ($P < .01$) and the CHANCE scale.

6.5.20.9 The NEGATIVE MENTAL category correlated positively with all three health locus of control scales.

6.5.20.10 All 6 categories correlated positively with the INTERNAL scale (2 at significant levels).

6.5.20.11 All 6 categories correlated positively with the POWERFUL OTHERS scale (4 at significant levels).

6.5.20.12 Five categories correlated positively (2 significant) and 1 negatively with the CHANCE scale.

Discussion

6.5.20.13 The POWERFUL OTHERS scale is associated most highly with an acknowledgement of the health concepts presented to pupils. This was a similar situation to that established in the Pilot Exercise in which the POWERFUL OTHERS scale was positively associated with the individual concepts and categories (as also was the INTERNAL scale).

6.5.20.14 Conversely the CHANCE scale was much less positively associated with the concepts in this exercise and in the earlier research. The reason for this is not completely clear but may reflect upon how the world is perceived by the particular pupils.

6.5.20.15 The significant positive correlation between the MEDICAL category and the INTERNAL scale replicates the finding in the Pilot Exercise (5.6.17.1). This further reinforces the high positive correlation established between the valuation of fitness and the INTERNAL scale (Table 29).

6.5.20.16 The PRESCRIPTIVE category is composed of items (63, 68 and 74) which involve compliance to a considerable extent. It is quite predictable therefore that the positive association of this category with the POWERFUL OTHERS scale would occur, as indeed was the case. Both sets of characteristics involve dependency and an acceptance of the views of other people.

6.5.20.17 The SOCIAL category is by definition highly involved with relationships with significant others. Consistency may therefore be claimed as a result of the closer associations established by this category with the 'external' POWERFUL OTHERS and CHANCE scales than the INTERNAL scale. Once again this finding was almost identical to that of the Pilot Exercise (5.6.17.13).

6.5.20.18 The ACHIEVEMENT category may at first glance, have been expected to correlate best with the INTERNAL scale since such a tendency has been associated (Phares 1976) with academic achievement. However the pupils were not being asked to rate achievement, only determine whether health was perceived in such terms. Therefore, in the light of such reflection, there is less surprise at the category's more positive association with the other two health locus of control scales.

6.5.20.19 One reason for this latter association may be that those with an "external" tendency are more sensitive to the effect that achievement (whatever the criteria) may have upon peer group acceptance and recognition. This could be exacerbated if such pupils have been less successful than others in achieving academic standards. By perceiving forms of achievement in health terms this provides opportunities for these pupils to compete in a new arena and fulfill psychological needs not being met in other areas of life. Such conjecture is however totally subjective and cannot be substantiated without further investigation.

6.5.20.20 The significant positive association between the POSITIVE MENTAL category and the INTERNAL scale replicates the finding in the Pilot Exercise (see 5.6.17.5). As the category was also similarly correlated with the POWERFUL OTHERS scale no major conclusion can be drawn. Pupils with high tendencies in both locus of control scales appear to acknowledge such conceptualisation of health whilst retaining different ideologies about perceived or desired personal control in these aspects of life.

6.5.20.21 The NEGATIVE MENTAL concept (or category) was perceived very similarly by pupils irrespective of locus of control beliefs. This lack of significant association in either direction with all three scales is consistent with the valuation of item 41 (sorting out worries) and its relationship with locus of control (Table 33). The construct of "sorting out worries" is highly valued (Table 32) but it is clear that this feeling is shared equally by pupils of all health locus of control tendencies in this study.

6.5.20.22 The findings again offer evidence of consistencies (and therefore reliability) in the responses given. Conceptualisation of health reinforces the different ways in which pupils perceive and make sense of their world. Within the various belief systems however the values appear to remain constant as shown in many of the above results. This suggests furthermore that the responses are valid as well as reliable and so reflect quite accurately the true feelings of the sample population.

6.5.21 The Response System

6.5.21.1 The NOT SURE Responses

Full details of these responses are shown in Table 38.

6.5.21.1.1 A total of 2818 NOT SURE responses were made out of a possible 22940, giving a rate of 12.3% (compared with 13.7% in the Pilot Exercise).

6.5.21.1.2 The responses for males were 8.8 per pupil (compared with 10.4 in the Pilot Exercise)

6.5.21.1.3 An average of 9.4 NOT SURE responses was made by each female (compared with 9.9 in the Pilot Exercise).

6.5.21.1.4 The highest group mean response was made by group K (15.1).

6.5.21.1.5 Group K showed the highest response for all male and female sub groups (13.9 and 16.5 respectively).

6.5.21.1.6 The lowest group mean response was made by group H (6.4).

6.5.21.1.7 The lowest male sub group response was made by group F (5.8) and for females by group A (6.6).

Discussion

6.5.21.1.8 The rate at which the NOT SURE column was used by pupils (12.3%) is not too dissimilar from what would be expected from a normal distribution of responses (14% i.e. 1 in 7 of the choices offered)

6.5.21.1.9 Attributes such as self confidence and esteem have been associated with internality (Phares 1976). It is likely

therefore, given this association, that those using the NOT SURE column highly would score less well on the INTERNAL scale.

6.5.21.1.10 Group K, the highest user of the NOT SURE column (see 6.5.19.1.4) recorded the lowest scale mean for the INTERNAL scale (Table 1). This was true for male and female sub groups in group K.

6.5.21.1.11 The lowest responding group to the NOT SURE column (group H) had the second highest scale mean on the INTERNAL scale (Table 1). Group H males recorded the highest scale mean for male sub groups on the INTERNAL scale (Table 11).

6.5.21.1.12 Conversely group K (the highest user of the NOT SURE column) recorded the second highest scale mean for the POWERFUL OTHERS scale (Table 4) and the CHANCE scale (Table 7).

6.5.21.1.13 Group H also recorded the lowest scale mean on the CHANCE scale (Table 7) and the second lowest scale mean on the POWERFUL OTHERS scale (Table 4).

6.5.21.1.14 When comparing the groups visited personally with those 'administered' by tutors the use of the NOT SURE column was similar. The 6 groups personally visited made 848 responses (N = 107 pupils), a rate of 7.9 per pupil. The remaining 9 groups (N = 203) made 1970 NOT SURE responses, a rate of 9.7 per pupil. Though being a higher rate the latter groups did not appear to use the NOT SURE column significantly more than those visited personally.

6.5.21.1.15 These findings appear to offer consistent and somewhat convincing evidence in support of the association between self confidence and the use of the NOT SURE response. It furthermore confirms the reliability of the health locus of control scales developed. Finally it provides a concrete example of the way in which the attribute of self confidence (and locus of control) manifests itself in the completion of the very task designed to identify the characteristics in the first place.

6.5.21.2 The BLANK responses

6.5.21.2.1 A total of 314 blank responses were recorded by the sample population (1.3% of all possible responses).

6.5.21.2.2 When allowing for 12 pages that had been "missed out" by pupils this left 178 deliberate blank responses actually made by pupils (.08% of all possible responses). This compared with a rate of 1.2% in the Pilot Exercise.

6.5.21.2.3 Males accounted for 83 blank responses and females 95 such responses. In the Pilot Exercise the male rate had been much higher than females (see 5.6.19.2).

6.5.21.2.4 All 12 missing pages were on questionnaires completed by male pupils.

6.5.21.2.5 The missing pages were mainly in those schools not visited personally by the author. Whereas 2 pages from 107 pupils were missing in those schools visited personally, 10 pages from 203 pupils were missing in those schools in which the research was carried out by the teachers themselves.

6.5.21.2.6 In terms of BLANK responses generally 66 such responses were made by pupils (N=107) in those schools visited personally, a rate of .6 per pupil. In the other schools 248 BLANK responses were recorded by pupils (N=203), a rate of 1.2 per pupil. This is exactly twice the rate for the former group and again suggests a lower motivation by staff may be present which in turn is 'transmitted' to pupils. If such conjecture is valid it should be resolved in future by the use of the scales on a self-selective basis by teachers who have a particular interest in the subject in question.

Discussion

6.5.21.2.7 These findings support the view that the comprehension component has been further improved in the latest research phase with males in particular showing a marked improvement compared with earlier studies.

6.5.21.2.8 The increase in missing pages and BLANK responses in those schools not visited personally probably reflects a lower motivation in teachers who had been asked to undertake the exercise. Where teachers choose to employ the scales in future for their own interest and teaching strategy this should lead to improvements in this aspect with more effective reminders for pupils to check responses thoroughly. This would apply to boys in particular, according to these findings, though both genders would benefit from such rigour in the enquiry process.

6.5.22 Profiling

The value of educational profiling has been discussed earlier (1.4) as also has the contribution of health profiling to the wider process of educating young people. The data collected in this research programme relates primarily to locus of control though one particular category focuses upon a number of concurrent issues such as risk taking and perceived susceptibility to ill health.

Using this data collection, suitably validated during the analysis phase, it is possible to construct individual and group profiles both within and between the variables examined during the research.

Group Profiles

6.5.22.1 Table 11 shows means for "internality", "chance" and "powerful others" scales based upon tutor groups and gender. Each of the scales is composed of twelve items (questions) responded to on a seven point basis from strongly agree to strongly disagree, with a corresponding score being allocated from seven to one (6.3.1). The score for each pupil will thus be within the range twelve to eighty four (Appendix III). Figure 1 over illustrates the profile for two tutor groups.

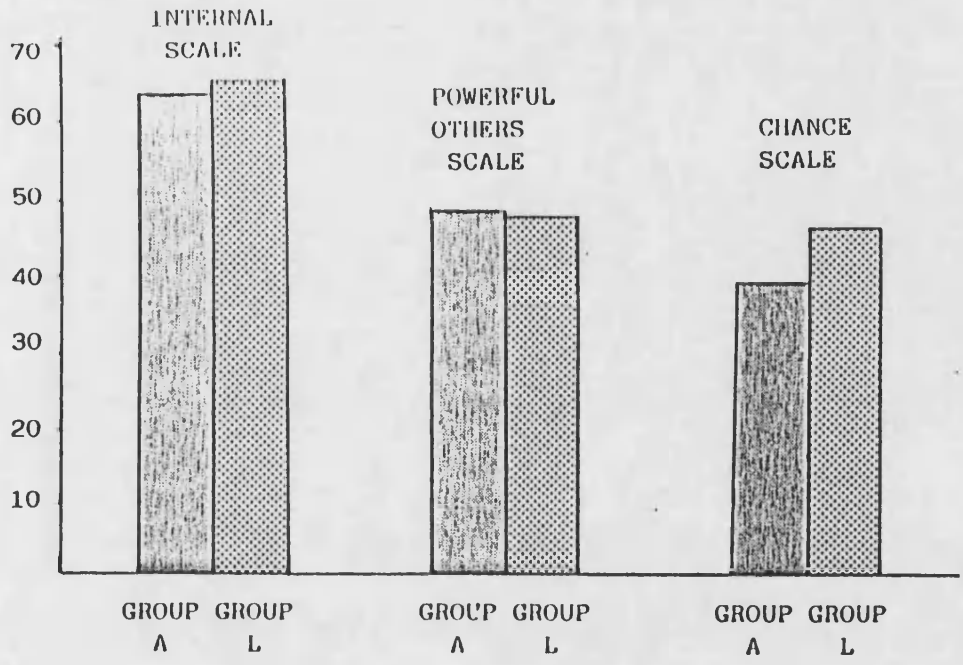


Figure 1 Comparison of group mean scores

Though somewhat similar the profile does show the position of each group in relation to the scales. Such information could be of use to a class teacher or other member of staff wishing to obtain a baseline of locus belief prior to a curriculum programme or as an evaluative tool in measuring outcome with a particular group. If standardised age group norms were calculated as a result of extensive research these could be compared with specific groups within a school. Such a norm-referenced approach would be useful in terms of programme planning by those with responsibility for personal education in schools.

Individual Profiles

6.5.22.2 With a more precise approach (criterion-referenced) it is quite possible to compile a locus of control profile for each pupil (Figure 2). This would enable pupils to be identified in terms of their 'locus' position and have their progress monitored over a period of time both in terms of their earlier scores, current situation and relationship to group norms. Such knowledge could be of immense use to teachers responsible for pastoral care and be more valid than subjective assessment of pupils alone. This measuring process should be seen as complementing the observational skills of teachers rather than a movement towards replacement.

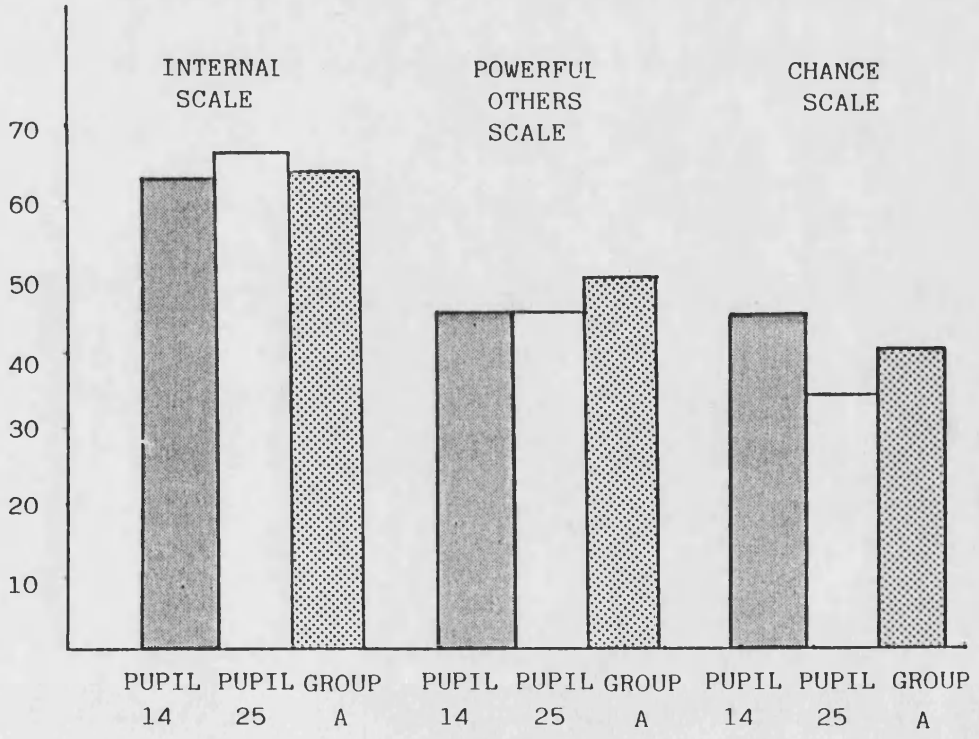
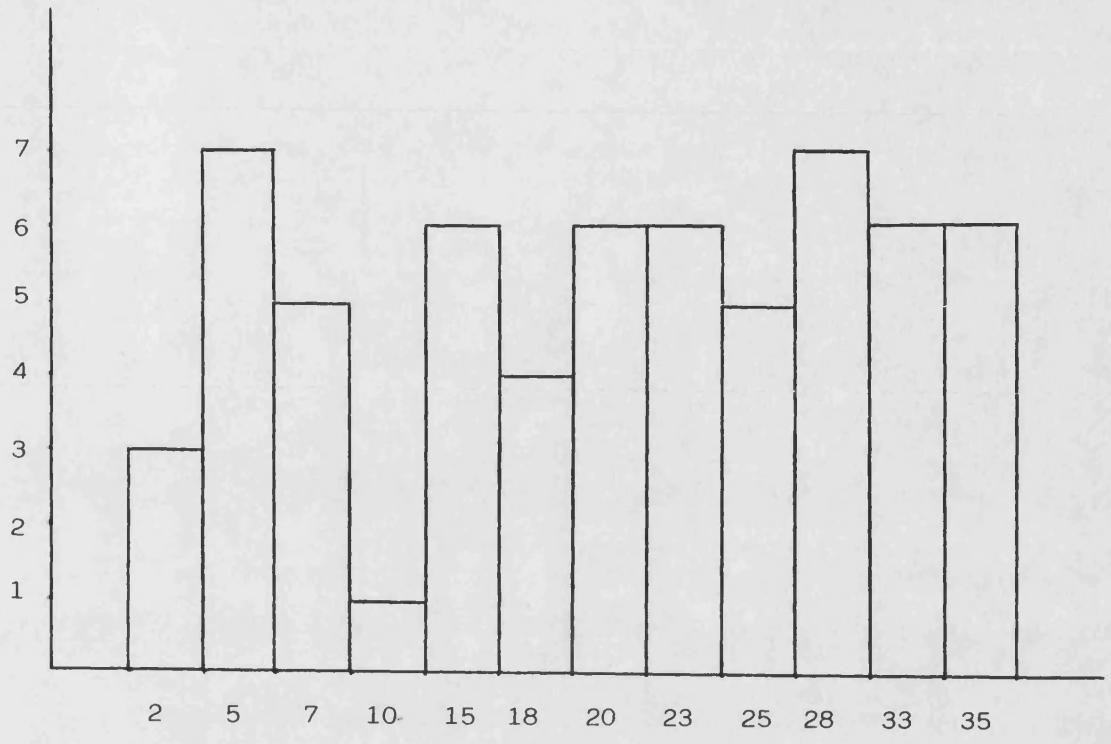


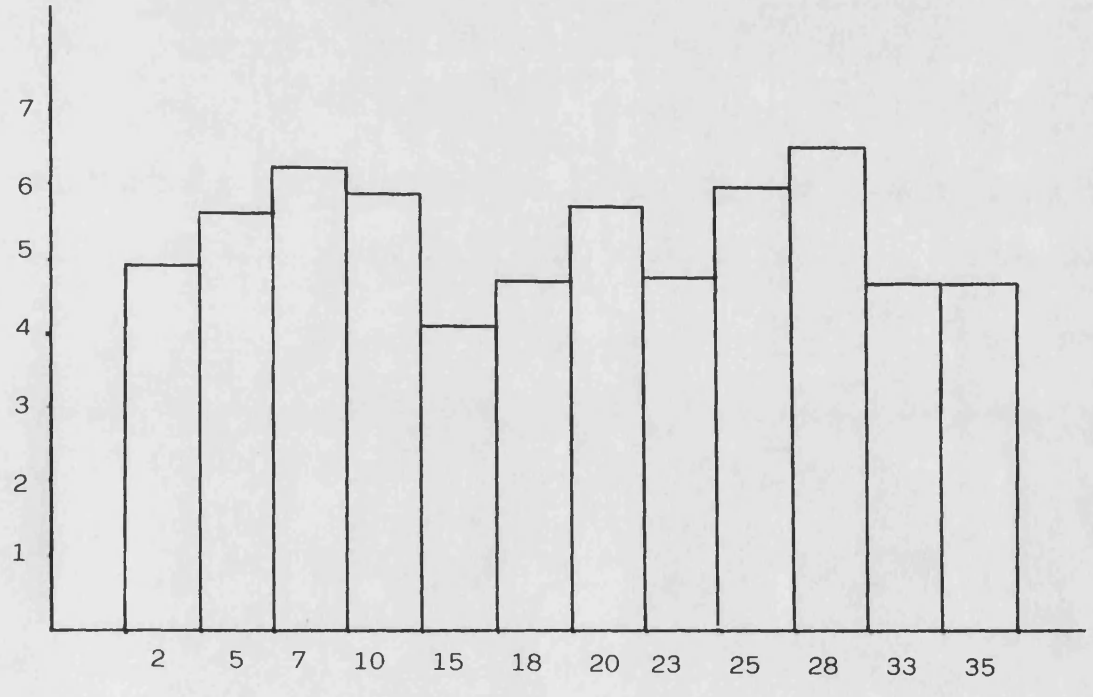
Figure 2 Comparison of pupils and their respective group mean scores

A further refinement could be a personal profile illustrating the score on items of each locus scale. Figure 3 shows the scores of pupil 62 on the twelve items comprising the Internal scale. These individual profiles could be compared with earlier scores, with other pupils or with group norms. (as shown).

In a similar way an individual profile for each pupil could be constructed for the 'Chance' and 'Powerful Others' scales. This more precise profile would enable particular items scoring low on the scale to be identified by a teacher and acted upon in whatever way was considered appropriate. This of course raises the question of the objective of introducing the measure initially to pupils. As with any other innovation the teacher must think through the purpose of the exercise and retain the highest standard of ethics of the teaching profession at all times in its administration.

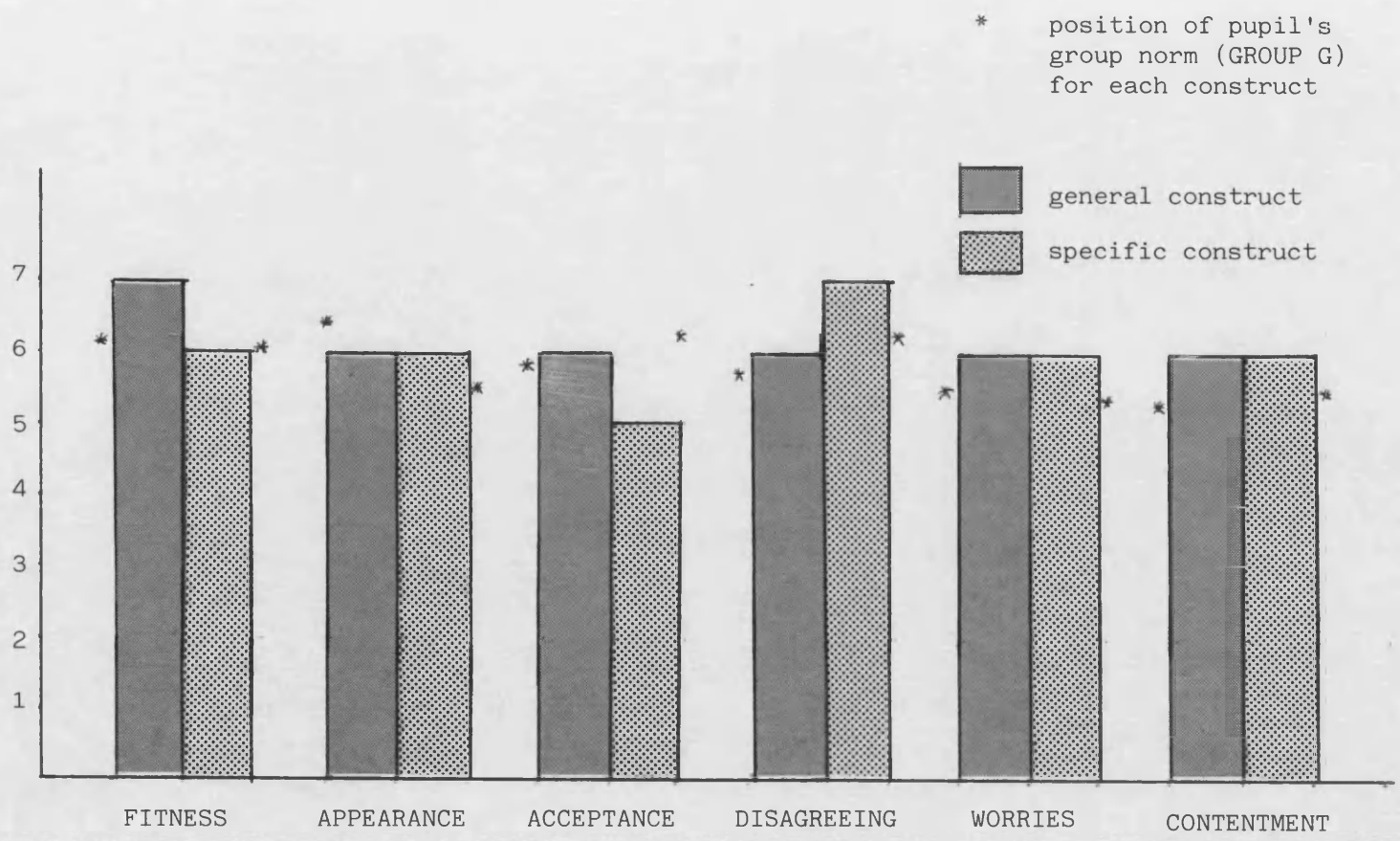


PUPIL 62



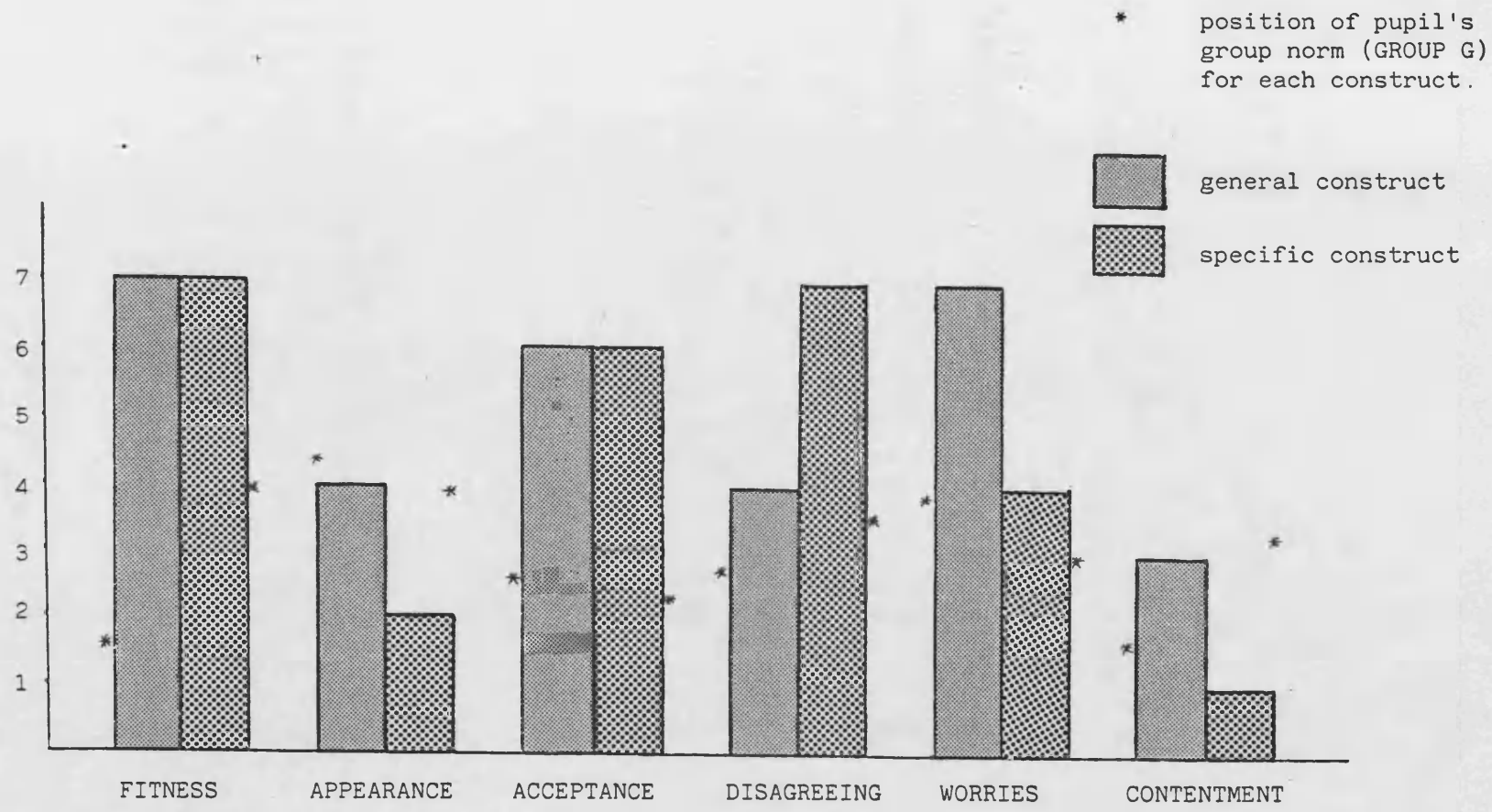
GROUP 'A' MEAN SCORES

Figure 3 Pupil and group profiles - Internal Scale



PUPIL 126

Figure 4 Comparison of individual pupils and their group mean by construct - internal scale



PUPIL 289

Figure 5 Comparison of individual pupils and their group mean by construct - Chance Scale

The charts shown in Figure 4 can be discussed with the pupil in question to identify the various levels of locus of control illustrated for each construct in its general and specific form by locus of control scale (in this case POWERFUL OTHERS). This will help the pupil to decide whether he wishes to exert a greater element of control over the construct(s) and, in such cases, afford an opportunity for the teacher to pursue whatever strategy has been designed for the attainment of such objectives.

Typology

6.5.22.3 At the commencement of this research project there was some uncertainty as to the case for including alternative locus of control option questions with regard to all the constructs being studied. The various findings, however, have supported the case for retaining such options on all occasions (see 6.5.5.4).

As a result of this 'option' system it becomes possible to construct locus of control types from the comprehensive data collected. These types may be based upon a generalised health locus of control concept, specific constructs (e.g. fitness, contentment) or a particular aspect of a construct (e.g. personal appearance when being interviewed). One method of constructing health locus of control types would be a comparative portrayal of the 'internal', 'powerful others' and 'chance' scores. Though there is in theory a large number of possible combinations, 8 distinct types may be shown as follows:

	Internal	Powerful others	Chance	
1.	h	l	l	
2.	h	l	h	
3.	h	h	h	
4.	h	h	l	
5.	l	l	l	h = high score
6.	l	h	h	l = low score
7.	l	h	l	
8.	l	l	h	

The types identified may be described briefly as:

1. A very internalised person showing considerable desire to control events which affect oneself and to make any decisions necessary to this end.

2. A person showing high levels of internality but still placing much emphasis upon the power of chance and fate in life.

3. Someone wishing to please the author(s) of research by agreeing with everything where negative wording of items has not (or could not have) been employed.

4. An internal type in general but who still has a high degree of dependence upon certain other people, probably in a very selective capacity.

5. Someone who has very little motivation towards, or interest in, the constructs involved. Alternatively it

may reflect a person who doesn't normally express strong feelings for one reason or another.

6. A highly externalised person very dependent upon other people and chance factors for determining the major outcomes in life.

7. Someone very dependent upon other important people for decision making and advice generally. There may be low levels of self esteem and confidence but not necessarily so; possibly a lack of maturity also exists.

8. A person who strongly believes in the power of fate and chance at the expense of all other factors. Such an individual may do very little to initiate or change events which are perceived as being beyond the influence of self or others.

Though containing many generalisations these types are sufficiently different to be accepted as identities related to the locus of control trait. Such types (or profiles) could be constructed for the complete health enquiry or for sub categories. For instance a pupil might be type 1 for 'fitness' where he has considerable ability (and confidence) but type 4 with regard to 'sorting out problems with homework' where a parent has created a certain degree of dependency. Therefore, the construct itself may determine which type is adopted as may the particular context. Whichever factor proves salient the possibility nonetheless

exists for specific health locus of control types to be identified by this research measure and deployed to facilitate greater mutual understanding for all involved in the personal development of young people.

6.5.23 Summary of the Findings

The following results were the major findings to emerge from this investigation, the main phase of the full research programme.

1. Gender in itself is not a signficant factor in determining health locus of control. 6.5.1.26

2. Considerable differences were identified within tutor groups thereby demonstrating the need to examine the responses from individual pupils. 6.5.1.28

3. Children become more "internal" with increasing age. 6.5.1.23

4. Dependence upon other people declines at a slower rate than the increase in internality thus suggesting the acquisition of discriminatory skills in selecting when to seek help. 6.5.2.20

5. The two external scales (POWERFUL OTHERS and CHANCE) were often closely associated in pupils' belief systems. 6.5.4.3

6. All six constructs made an important contribution to the measuring instrument. 6.5.5.4

7. Consistent beliefs were demonstrated towards the constructs both in terms of the value accorded them by pupils and the locus of control belief in both a general and specific context. 6.5.4.4; 6.5.1.31; 6.5.2.17; and 6.5.3.18

8. Pupils scoring highly on the INTERNAL scale are significantly more likely to accept the link between present behaviour and personal susceptibility to health consequences. 6.5.6.4

9. Pupils scoring highly on the CHANCE scale are significantly less likely to accept such a link. 6.5.6.6

10. Risk taking was negatively associated with an acceptance of such a link. 6.5.9.6

11. A valuation of new experiences was positively associated with the INTERNAL scale but negatively with the CHANCE scale. 6.5.7.12

12. All three health locus of control scales were positively associated with the RISK TAKING scale. 6.5.9.17

13. A significant positive correlation was established between a valuation of new experiences and valuation of risk taking. 6.5.9.19

14. The GOOD HEALTH scale was significantly associated with the INTERNAL scale (positively) and the CHANCE scale (negatively). 6.5.8.9 - 6.5.8.11

15. Pupils demonstrated that they had a wide perception of health involving many concepts. 6.5.19.10

16. The findings confirmed the existence of three distinct health locus of control scales, each with its own identity and relationship with the other scales. 6.5.1.20 - 6.5.1.22; and 6.5.3.19 -6.5.3.22

17. The re-wording of items and composition of item pools led to improvements in validity and reliability.

18. The response system was shown to be appropriate for the measuring instrument. 6.5.21.1.8

19. Items need to be retained which represent the constructs in a general and specific context.

20. For each construct items need to be included which record all three health locus of control measures. The present questionnaire format appears to be suitable for the purpose of this research programme and for further administration by teachers.

6.5.24 Conclusion

The major aims of this investigation, described earlier in section 6.2, would appear to have been achieved as a result of the above findings. The relevant data has been collected, identified and compared with previous results. Validity and reliability have been further tested and appropriate recommendations made for minor modifications to items. Levels of comprehension have been improved by the re-wording of items suggested as a result of the previous research phase. The association between the major and sub scales has been fully described, as also have the correlations between constructs in a general and specific context. Further recommendations have been made regarding the administration of the measure in educational settings and its application to the field of profiling.

There are reasonable grounds for claiming therefore that the scales have been adequately developed to the point where they may be offered with confidence to the wider education community. To this end a User's Guide is being prepared and it is to this task that it is now necessary to turn.

GOOD HEALTH SURVEY

APPENDIX 1

Boy or Girl .....

Group .....

School.....

This is NOT a test. It is an attempt to find out what your opinions and beliefs are about health. There are no right or wrong answers to the questions being asked.

Please answer the questions according to your true feelings

THANK YOU FOR YOUR HELP

Answering the questions

1. The questions that follow ask you to say whether you agree or disagree with something. There are 3 ways of agreeing or disagreeing

   STRONGLY means "very much" or "a great deal"

   SLIGHTLY means "only a bit" or "just a little"

   AGREE (or DISAGREE) means somewhere between STRONGLY and SLIGHTLY

2. If you are not certain what you feel in answer to any question, place a tick in the NOT SURE box against that question.

3. If you do not understand a question or cannot answer it for any other reason LEAVE ALL THE BOXES BLANK against that question.

TRY THIS SAMPLE QUESTION

PLACE A TICK IN ONE OF THE BOXES	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
I am always glad to return to school after the holidays							

PLEASE DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK
IN ONE BOX ONLY ON THE SAME LINE

		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
1.	Being physically fit is a matter of luck.							
2.	There's a lot that I can do to make myself look good to other people.							
3.	Whether or not my friends accept me is decided by them rather than me.							
4.	Its a matter of luck more than anything else whether I disagree with my friends about something.							
5.	If I am worried about something I feel that I have to try to sort it out for myself.							
6.	If I am happy its usually because of something other people have done rather than anything else.							
7.	Whether I am physically fit depends more upon me than anything or anyone else.							
8.	I need someone to help me look good to other people.							
9.	Being accepted by friends is decided more by chance than anything else.							
10.	I am quite prepared to disagree with my friends.							
11.	If I am worried about something I feel that I need someone to help me sort it out.							
12.	If my 'stars' say I am going to be happy thats more important than what I or other people do to make me happy.							
13.	I would not be able to get fitter than I am now unless someone helped me.							
14	Whether I look good to others is mainly a question of the body I was born with.							
15.	There's a lot that I can do for myself to help get my friends to accept me.							
16.	I am prepared to accept my friends opinions whenever we disagree about something.							
17.	The best way to sort out worries is to just hope that things turn out well in the end.							
18.	If I am happy its usually because of something I've done rather than anything else.							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ONLY ON THE SAME LINE

		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
	IF YOU HAD A FITNESS TEST COMING AT SCHOOL FOR A TUTOR GROUP COMPETITION would you:							
19.	Just hope that things go well on the day?							
20.	Decide that only you could get yourself fitter for the test?							
21.	Decide that only someone else could get you fitter for the test?							
	IF YOU HAD TO GO FOR AN INTERVIEW would you:							
22.	Think that you needed someone else's advice about how to dress and appear?							
23.	Think that you were quite capable of deciding for yourself how to dress and appear?							
24.	Just hope that your appearance gave a good impression?							
	IF A FRIEND ASKED YOU TO DO HIM (OR HER) A FAVOUR would you:							
25.	Do it because you always like to help your friends?							
26.	Do it because it would help you to be accepted by your friend?							
27.	Hope that your friend forgot about the favour?							
	IF YOU WERE DISCUSSING SOMETHING IMPORTANT WITH FRIENDS AND YOUR OPINIONS WERE DIFFERENT would you:							
28.	Be prepared to disagree with your friends?							
29.	Be prepared to accept your friends' opinions?							
30.	Hope that something caused the conversation to end?							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK
IN ONE BOX ONLY ON THE SAME LINE

	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
IF YOU WERE WORRIED ABOUT A PROBLEM WITH YOUR HOMEWORK would you:							
31. Decide that you needed someone to help you solve the problem?							
32. Just hope that by chance something came into your mind?							
33. Decide to carry on working at it on your own?							
IF SOMETHING HAPPENED AT SCHOOL THAT REALLY MADE YOU HAPPY would you:							
34. Think it was mainly due to luck?							
35. Think it was mainly due to something you had done rather than anything else?							
36. Think it was mainly due to something other people had done rather than anything else?							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK
IN ONE BOX ONLY ON THE SAME LINE

		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
	THESE THINGS ARE VERY IMPORTANT TO ME							
37	Being physically fit							
38	Looking good to other people							
39	Being accepted by my friends							
40	Being prepared to disagree with friends							
41	Sorting out any worries that I have							
42	Being happy							
43	A fitness test in a tutor group competition							
44	Looking good when being interviewed							
45	Doing a favour for a friend							
46	Being prepared to disagree with my friends in a conversation							
47	Solving any problems with my homework							
48	Good things happening at school							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK
IN ONE BOX ONLY ON THE SAME LINE

		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
49	I am not worried about things which may cause me harm in many years time.							
50	Good health doesn't come easy but has to be worked at all the time							
51	Avoiding accidents is not important to me.							
52	I will be healthier now and in future if I take care of my body.							
53	Life would be very boring if I never took any risks.							
54	Good health is not very important to me.							
55	I don't usually like new experiences							
56	If I take chances with my health I make it more likely that I will become ill.							
57	Good health is more a matter of luck than anything else.							
58	I enjoy doing things which have an element of risk.							
59	I think that all new experiences are exciting.							
60	I am more likely to have an accident if I take risks.							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK
IN ONE BOX ONLY ON THE SAME LINE

		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
	HEALTH to me means							
61	being fit							
62	having good friends							
63	obeying rules							
64	feeling good							
65	not having an illness or disease							
66	being admired							
67	having a good time							
68	doing what you are told							
69	enjoying life							
70	being liked by people							
71	being good at things							
72	not having any worries							
73	being happy							
74	self discipline and control							

APPENDIX II
THE COMPUTER PROGRAMME

```
JOB (:BEDGTM. RUN)
DELETE (HEALTH)

SPSS (SAVEFILE = HEALTH)
- - - -
RUN NAME            LOCUS

FILE NAME           HEALTH

VARIABLE LIST       GROUP, GENDER, QI TO Q 74

INPUT MEDIUM        CARD

INPUT FORMAT        FIXED (F2.0, 75F1.0)

N OF CASES          310

VALUE LABELS        GROUP (01)A (02)B (03)C (04)D (05)E (06)F (07)G (08)H
                          (09)I (10)J (11)K (12)L (13)M (14)N (15)O
                    GENDER  (1) MALE  (2) FEMALE

COMPUTE             INTERNAL = Q2 +Q5 + Q7 + Q10 + Q15 + Q18 + Q20 + Q23 + Q25 +
                               Q28 + Q33 + Q35

COMPUTE             POWERFUL = Q3 + Q6 + Q8 + Q11 + Q13 + Q16 + Q21 + Q22 + Q26 +
                               Q29 + Q31 + Q36

COMPUTE             CHANCE   = Q1 + Q4 + Q9 + Q12 + Q14 + Q17 + Q19 + Q24 + Q27 +
                               Q30 + Q32 + Q34

COMPUTE             FITNESS =  Q1 + Q7 + Q13 + Q19 + Q20 + Q21 + Q37 + Q43

COMPUTE             APPEAR  = Q2 + Q8 + Q14 + Q22 + Q23 + Q24 + Q38 + Q44

COMPUTE             ACCEPT  = Q3 + Q9 + Q15 + Q25 + Q26 + Q27 + Q39 + Q45

COMPUTE             DISAGREE =  Q4 + Q10 + Q16 + Q28 + Q29 + Q30 + Q40 + Q46

COMPUTE             WORRIES =   Q5 + Q11 + Q17 + Q31 + Q32 + Q33 + Q41 + Q47

COMPUTE             CONTENT = Q6 + Q12 + Q18 + Q34 + Q35 + Q36 + Q42 + Q48

COMPUTE             SUSCEPT = Q49 + Q52 + Q56 + Q60

COMPUTE             GOOD H = Q50 + Q51 + Q54 + Q57

COMPUTE             RISK    = Q53 + Q58

COMPUTE             NEW     = Q55 + Q59
```

```
COMPUTE                 CONCEPT = Q61 + Q62 + Q63 + Q64 + Q65 + Q66 + Q67 +
                                  Q68 + Q69 + Q70 + Q71 + Q72 + Q73 + Q74

CONDESCRIPTIVE          Q1 to Q74

STATISTICS              ALL

READ INPUT DATA

/f
.r  HEALTH

a

RELIABILITY             VARIABLES       = Q2,Q5,Q7,Q10,Q15,Q18,Q20, Q23, Q25,
                                          Q28, Q33, Q35/

                        SCALE(TEST)     = Q2,Q5,Q7,Q10,Q15,Q18,Q20,Q23,Q25,Q28
                                          Q33,Q35/

STATISTICS              ALL

RELIABILITY             VARIABLES       = Q3,Q6,Q8,Q11,Q13,Q16,Q21,Q22,Q26
                                          Q29,Q31,Q36/

                        SCALE(TEST)     = Q3,Q6,Q8,Q11,Q13,Q16,Q21,Q22,Q26,
                                          Q29,Q31,Q36/

STATISTICS              ALL
   ditto                ditto

RELIABILITY             VARIABLES  = Q61,Q62,Q63,Q64,Q65,Q66,Q67,Q68,Q69,
                                     Q70,Q71,Q72,Q73,Q74/

                        SCALE(TEST) =     Q61,Q62,Q63,Q64,Q65,Q66,Q67,Q68,
                                          Q69,Q70,Q71,Q72,Q73,Q74/

STATISTICS              ALL

BREAKDOWN               TABLES = Q1 to Q74 BY GROUP

STATISTICS              ALL

BREAKDOWN               TABLES = Q1 To Q74 BY GENDER

STATISTICS              ALL

BREAKDOWN               TABLES = INTERNAL BY GROUP

STATISTICS              ALL
```

```
BREAKDOWN               TABLES = INTERNAL BY GENDER

STATISTICS              ALL

BREAKDOWN               TABLES = POWERFUL BY GROUP

STATISTICS              ALL

BREAKDOWN               TABLES= POWERFUL BY GENDER

STATISTICS              ALL

BREAKDOWN               TABLES= CHANCE BY GROUP

STATISTICS              ALL

BREAKDOWN               TABLES = CHANCE BY GENDER

STATISTICS              ALL
PEARSON CORR            INTERNAL WITH POWERFUL
PEARSON CORR            INTERNAL WITH CHANCE
PEARSON CORR            POWERFUL WITH CHANCE

COMPUTE                 Q100 = Q49 +Q52 +Q54 +Q60

PEARSON CORR            Q100 WITH INTERNAL, POWERFUL AND CHANCE

COMPUTE                 Q101= Q50 +Q51 +Q54 +Q57

PEARSON CORR            Q101 WITH INTERNAL, POWERFUL AND CHANCE

COMPUTE                 Q102 = Q53 + Q58

PEARSON CORR            Q102 WITH INTERNAL, POWERFUL AND CHANCE

COMPUTE                 Q104 = Q55 + Q59

PEARSON CORR            Q104 WITH INTERNAL, POWERFUL AND CHANCE

PEARSON CORR            Q26 WITH INTERNAL, POWERFUL AND CHANCE

COMPUTE                 Q103 = Q62 +Q66 +Q70

PEARSON CORR            Q103 WITH INTERNAL, POWERFUL AND CHANCE

COMPUTE                 Q105 = Q64 + Q67 +Q69 +Q73

PEARSON CORR            Q105  WITH INTERNAL, POWERFUL AND CHANCE

BREAKDOWN               TABLES = SUSCEPT BY GROUP

STATISTICS              ALL

BREAKDOWN               TABLES = SUSCEPT BY GENDER

STATISTICS              ALL

BREAKDOWN               TABLES = GOODH BY GROUP

STATISTICS              ALL
```

```
BREAKDOWN               TABLES = GOODH BY GENDER

STATISTICS              ALL

BREAKDOWN               TABLES = RISK BY GROUP

STATISTICS              ALL

BREAKDOWN               TABLES = RISK BY GENDER

STATISTICS              ALL

BREAKDOWN               TABLES = NEW BY GROUP

STATISTICS              ALL

BREAKDOWN               TABLES = NEW BY GENDER

STATISTICS              ALL

PEARSON CORR            RISK WITH INTERNAL, POWERFUL AND CHANCE

PEARSON CORR            SUSCEPT     "         "          "

PEARSON CORR            GOODH       "         "          "

PEARSON CORR            NEW         "         "          "

PEARSON CORR            Q2,Q5,Q7,Q10,Q15,Q18,Q20,Q23,Q25,Q28,Q33,Q35 WITH
                        POWERFUL AND CHANCE

PEARSON CORR            Q3,Q6,Q8,Q11,Q13,Q16,Q21,Q22,Q26,Q29,Q31,Q36 WITH
                        INTERNAL AND CHANCE

PEARSON CORR            Q1,Q4,Q9,Q12,Q14,Q17,Q19,Q24,Q27,Q30,Q32,Q34 WITH
                        INTERNAL AND POWERFUL

PEARSON CORR            Q57 WITH CHANCE, POWERFUL AND INTERNAL

PEARSON CORR            Q26 WITH INTERNAL AND CHANCE

PEARSON CORR            Q61 - 74 WITH INTERNAL, POWERFUL AND CHANCE

T-TEST                  GROUPS = GROUPS (07,11)/VARIABLES = INTERNAL
                          "        "    (06,07)/   "          "
                          "        "    (11,12)/   "          "
                          "        "    (10,05)/   "      = POWERFUL
                          "        "    (03,05)/   "          "
                          "        "    (08,12)/   "      = CHANCE
                          "        "    (03,05)/   "          "
```

```
PEARSON CORR                INTERNAL WITH POWERFUL
PEARSON CORR                INTERNAL WITH CHANCE
PEARSON CORR                POWERFUL WITH CHANCE
T-TEST                      GROUPS = GROUP (03,08)/  VARIABLES = GOODH
  "                           "      "   (03,05)/     "         "
  "                           "      "   (07,08)/     "         "
  "                           "      "   (14,15)/     "    =  RISK
  "                           "      "   (06,11)/     "    =  SUSCEPT
SELECT IF                   (GROUP EQ 01)  Also for Groups 2 - 15
FREQUENCIES                  INTEGER = Q1 TO Q74 (1,7)
SELECT IF                    (GENDER EQ 1)
FREQUENCIES                  INTEGER = Q1 TO Q74 (1,7)
SELECT IF                    (GENDER EQ 2)
FREQUENCIES                  INTEGER = Q1 TO Q74 (1,7)
FREQUENCIES                  INTEGER = Q1 TO Q74 (1,7)
SAVE FILE                    HEALTH
FINISH
+  +  +  +
SAVE (HEALTH)
LTD
*  *  *  *
```

APPENDIX III

Author M. J. HEAD

Date MAY 19..

Title HEALTH LOCUS OF CONTROL

Page 1 of 15

GROUP GROUP GENDER M I

DATA

QUESTIONS 1 TO 74

1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80
C1156	22556	15724	62461	57556	52725	76476	66533	66546	16336	67367	25672	45734	35623	36566	75
C1125	64465	14644	65363	37552	66622	65644	14465	35666	36661	66436	55722	66252	24622	24455	54
C1156	76456	63672	14571	35626	56631	76764	23646	76567	35662	17434	73173	77256	24177	17476	71
C1114	51657	12772	25411	62632	72651	64471	32246	77677	67677	67576	56442	43575	35444	54553	64
C1155	63757	16764	35371	56716	25712	65365	25556	33657	57625	37374	57471	13761	25533	26564	55
C1114	31656	11731	47215	56621	75611	77265	63614	63777	26676	56224	77765	56661	16713	15133	54
C1113	61377	31774	47161	11715	41411	77151	41457	33766	47677	77777	67472	77775	27727	26417	77
C1156	52653	23632	32565	56337	53752	76553	55555	66666	57666	66666	37563	35756	55566	56666	65
C1112	66737	11731	17261	51715	41711	77162	51167	56777	15577	47717	17562	33773	52711	45226	53
C1156	75757	26722	56457	75727	56776	74667	76547	77667	57676	76616	74665	77376	27767	47675	77
C1123	32457	32541	22662	51636	47514	65223	74656	56576	55467	67665	46751	46365	57644	66565	75
C1165	72736	23624	56635	52627	52562	75364	54657	77257	47526	67277	14432	56677	67766	67777	76
C1126	54547	14443	26211	66546	66542	74554	44444	46657	37476	42464	74432	65445	44456	44451	66
C1113	43745	32124	54675	45633	64521	73345	66656	65677	56657	75545	55653	56653	26546	36457	73
O1126	22355	21745	66465	67556	52752	77173	63666	76667	67766	77276	37763	57463	36666	36665	66
O1356	62656	23656	21525	62626	32754	76635	66665	66366	46625	56666	57222	55362	56446	76656	63
O1326	42626	12622	22664	62615	32621	76265	62464	25666	26666	66646	16442	26242	26624	46226	62
O1315	41646	51641	24534	42417	31751	63172	12373	66467	17657	67477	57351	34752	16674	56766	67
O1364	34765	34751	34314	26535	56623	72556	64456	56767	56676	67355	46375	22765	56635	55452	65
O1316	64666	44152	22224	53616	44642	66262	44645	67577	16646	47676	37661	35564	56742	64555	67
O1326	42537	12721	21573	53545	63711	77153	33355	43545	26772	31527	27661	13356	55536	56634	75
O1326	42766	34742	22454	47535	46643	76165	46457	77777	67677	72626	57651	67477	57677	67777	77
O1326	51636	12653	36677	66723	57562	76563	55537	67557	77762	77677	77651	77373	17667	17773	66
O1336	71637	63764	51521	35563	62326	62346	47446	66777	35353	66767	57641	75541	47777	17111	77
C1334	62626	22531	21443	51742	65624	56753	62565	66567	67646	67576	27641	35757	57777	57777	77
O1226	34567	32662	15563	55625	35652	66563	54656	66667	56666	63666	56562	55566	56656	56666	76

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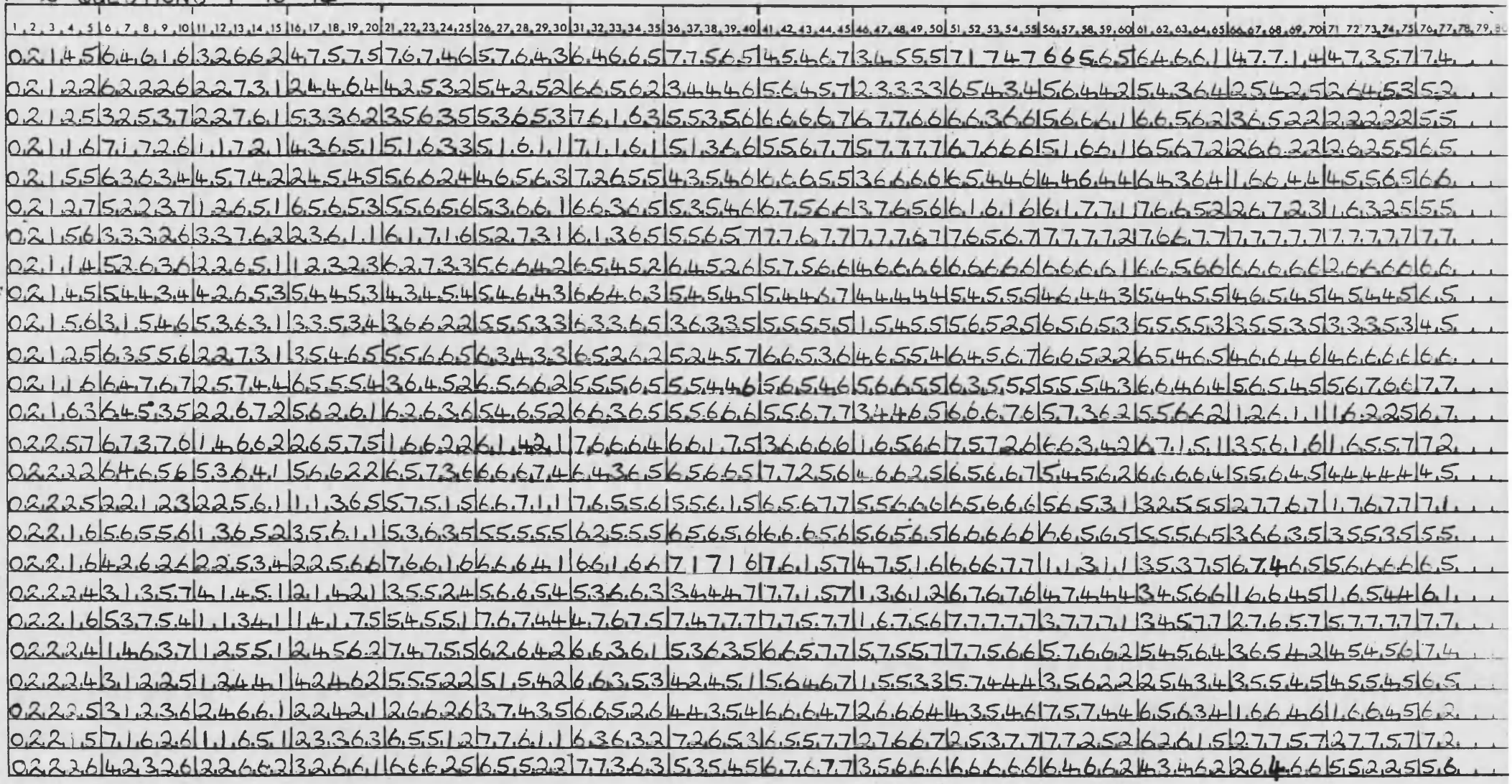

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1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80
04116	42647	32622	12542	44622	63542	64464	33444	64777	46646	62726	27461	14756	47725	47346	74
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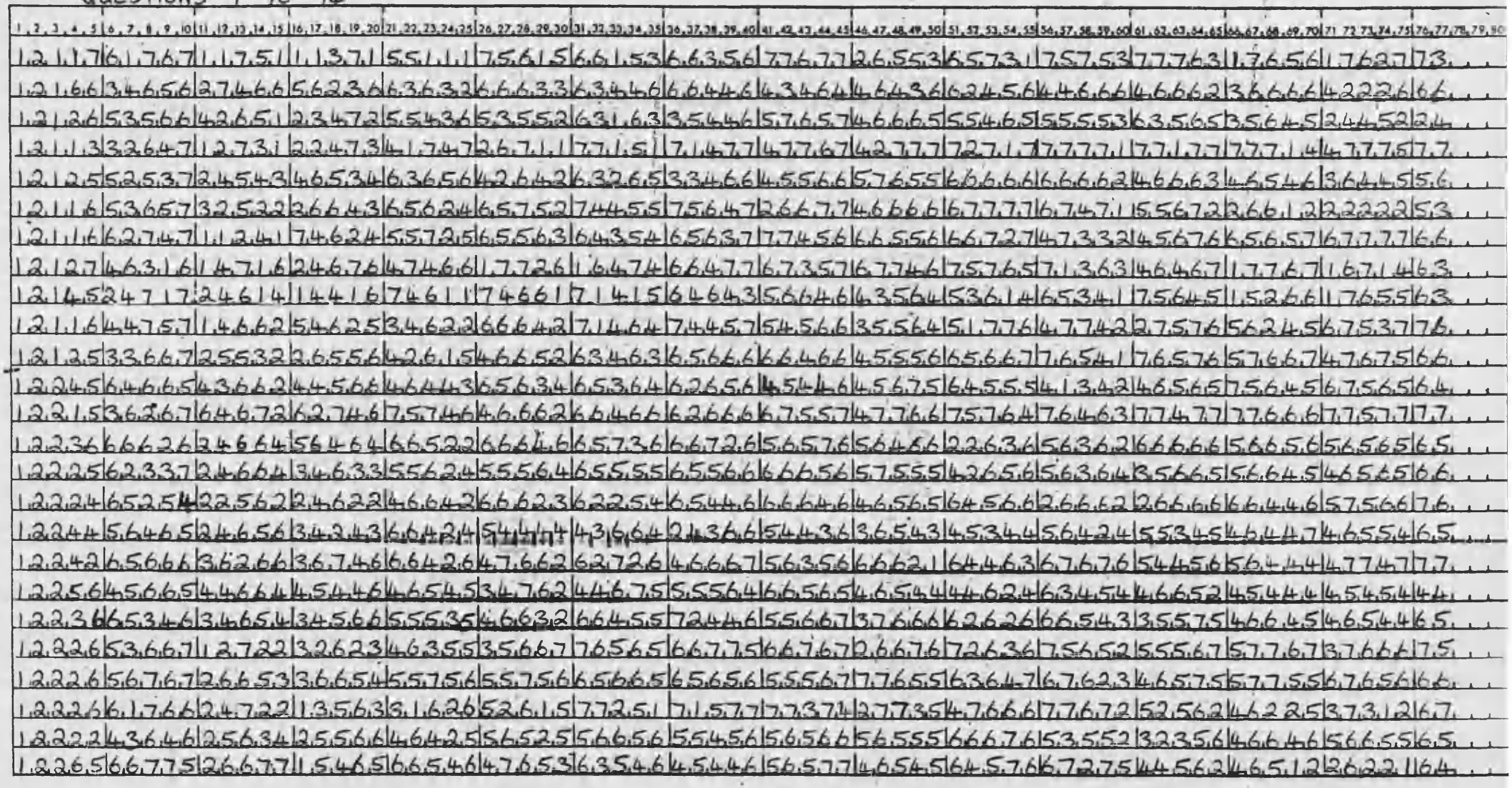

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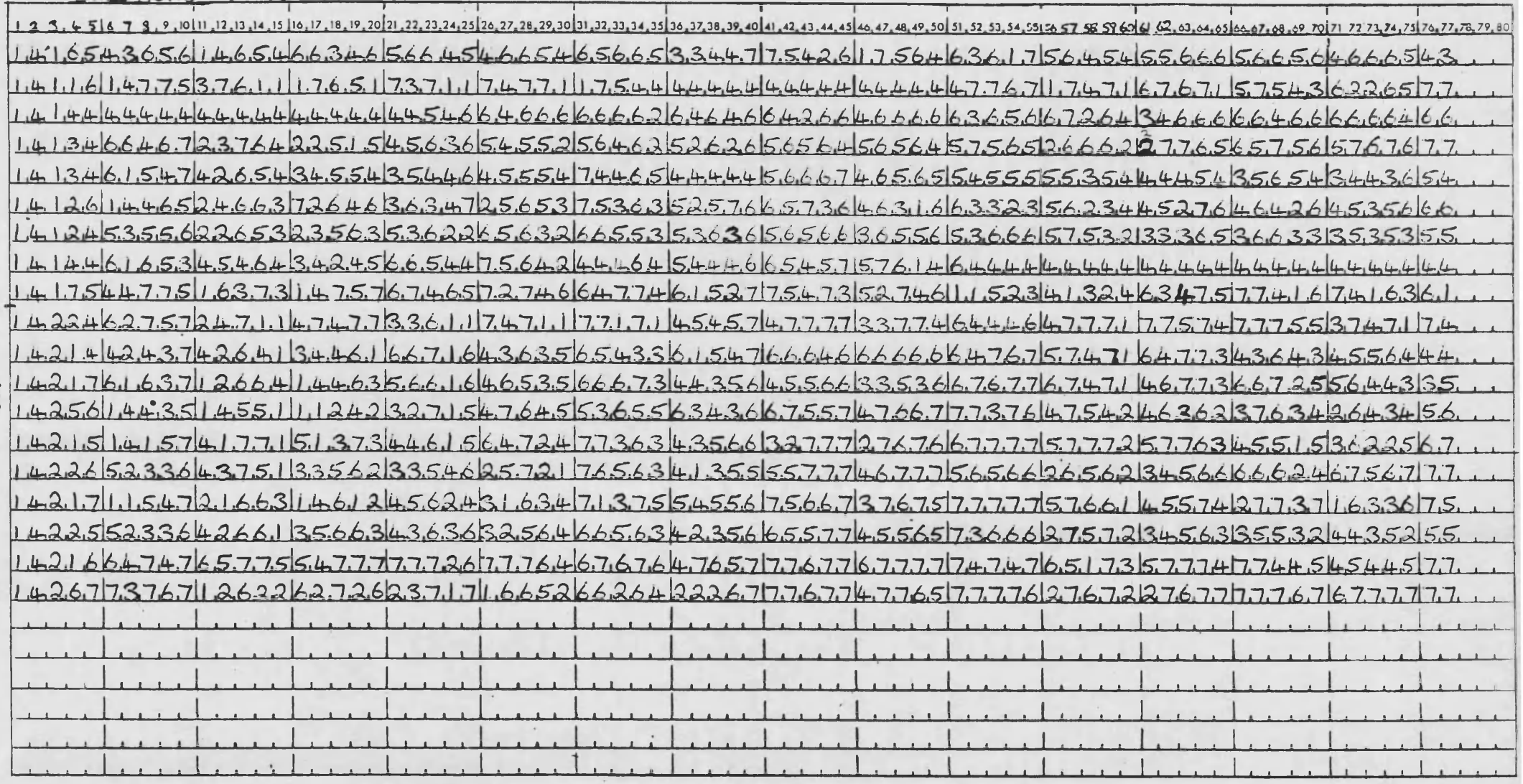

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CHAPTER 7

THE DEVELOPMENT OF A USER'S GUIDE FOR THE HEALTH LOCUS OF CONTROL SCALES

7.1 INTRODUCTION

Research and development projects may often prove to be successful during the period when designers are in a position to retain a considerable measure of control over their use in the particular field in question. On some occasions however subsequent use by practitioners may contravene the established principles of the project in question. This may relate, for instance, to lack of understanding by Users of the project's purpose, to poor appreciation of its potential, to lack of skill by Users or to poor judgement in the application of the project to specific tasks.

With this in mind it was decided that a User's Guide would be developed for these scales in order to reduce the likelihood of such misuse and facilitate optimal benefit being accrued by the target group in question, in this case secondary school pupils aged thirteen and fourteen.

7.2 AIMS

The major aims of the User's Guide are:

i) to explain the rationale of Health Locus of Control;

ii) to describe the structure of the scales;

iii) to explain the analysis of questionnaires;

iv) to help Users become aware of the potential uses of the scales;

v) to reduce the likelihood of scales being misused; and

vi) to provide a protocol for administering the scales.

7.3 THE DEVELOPMENT PROGRAMME

7.3.1. The involvement of teachers in the development of the Guide, as potential Users of the scales, was considered to be essential. In this way not only would a document be produced based upon consumer needs but also one that would improve the acceptability to Users aware of this level of teacher involvement.

7.3.2. First Draft

The first draft of the User's Guide (Appendix I) was produced and sent to four of the teachers who had been actively involved with earlier phases of the research programme. Another copy was sent to the Wiltshire Education Adviser for Social and Personal Education who had also shown interest in the scales.

The Guide was written under a number of headings:

Purpose of the Guide

What is Health Locus of Control?

What do the scales actually measure?

What uses do the scales serve?

What issues are involved?

The question format

Administering the scales

Analysing the scales

What are you trying to achieve?

An evaluation form (Appendix II) was also designed and distributed with the first draft to facilitate response and help reduce the burden of yet more work for the teachers concerned. The material was sent just prior to half term in the hope that this would afford the opportunity of an early response from the sample population.

A seminar on this research programme was held with other research students on 10 February 1986. Many points of interest were raised for discussion including the format of the User's Guide. These suggestions were again taken into consideration during the subsequent review stage of the document.

7.3.3. Review and Modifications

Based upon the comments received a number of amendments were made to the Guide.

1) The section entitled "What are you trying to achieve?" was considered to be too robust and perhaps prescriptive in its present form. It had been written to stimulate Users

into considering their objectives and motives for administering the scales. The section was consequently removed and its main features integrated into the opening section "Purpose of the Guide".

2) It was decided that the definition of "locus of control" would be emphasised by being framed (see Appendix III) since several teachers had been uncertain of the precise meaning of the term. Furthermore the definition would not refer to fate as being an example of the CHANCE disposition since fate could, by ideological concepts, refer equally to POWERFUL OTHERS under the notion of a controlling external force.

3) The section "What uses do the scales serve?" was developed to incorporate an additional series of suggested uses to which the scales could be put as a contribution to programmes of personal education. It was hoped that this would then appeal to a wider range of teachers as well as helping some teachers to extend the use to which the scales would be put.

4) Users were asked to consider carefully whether or not they would administer the scales anonymously. A brief reference was made to the advantages and disadvantages of each option without any recommendation being made. It was considered that the knowledge teachers possessed of their pupils' likely reaction to each option should be the major determinant of the decision whether or not the questionnaire should be completed anonymously.

5) References to specific statistical tests were deleted in order to simplify the Guide and avoid unnecessary anxiety for those Users unfamiliar with such tests.

6) The use of the data sheet (Appendix (ii)) was explained further by showing a completed questionnaire (Appendix (i)) and the corresponding scoring system on the first line of the data sheet. In this way it was hoped that Users would be encouraged and helped to keep accurate and objective records of their own enquiries.

7) The intention of helping Users to develop their own scales was rescinded as this would have required both considerable explanation and more assistance that the Guide alone was capable of providing for Users.

8) Similarly it was decided not to include details of the research findings in the Guide as was originally envisaged. The purpose of the Guide was considered to be primarily the production of an aid to proper use of the scales rather than as a mechanism for the dissemination of research findings. These would be more appropriately described in an alternative document.

9) An administration procedure (Appendix (iii)) was designed to assist the creation of suitable conditions and to ensure that as far as possible valid responses would be obtained from pupils.

7.3.4. The User's Guide (Final Version)

The Guide (Appendix III) has now been completed and is ready for dissemination together with the Health Locus of Control Scales. There remains a possibility that the scales will be misused by teachers and others in educational settings. The Guide however should go some way towards minimising such improper usage both in terms of probability and effect.

The Guide is not a manual giving prescribed instructions to be followed rigorously by Users. It has been designed to create a framework within which educators may practise whilst at the same time enabling originality and creativity to emerge. It accepts that Users have much to offer the research process upon which they have chosen to embark. It is their project together with their pupils. The hope is that their journey has been made easier and more rewarding as a result of the scales and associated Guide which have been developed and made available to them.

APPENDIX I

HEALTH LOCUS OF CONTROL

USER'S GUIDE

PURPOSE OF THE GUIDE

This Guide has been developed to explain the potential use of new scales designed to measure 'HEALTH LOCUS OF CONTROL' in adolescents aged 13-14 years. As well as describing the structure of individual components the Guide also offers suggestions for administering the scales together with ideas for analysing results. Finally the Guide will assist those who wish to develop their own scales using other issues than those involved in this measure.

WHAT IS HEALTH LOCUS OF CONTROL?

Locus of control may be seen as a "tendency to believe that important outcomes in life are either within one's own control or are determined by external factors such as fate, chance or other people". When the focus of attention relates to matters of health the more specific HEALTH LOCUS OF CONTROL comes into operation.

The notion of perceived control over events is extremely wide-ranging and may be applied to almost every aspect of life both within and outside schooling. It has consequently been widely researched and associated with issues such as self-determination, conformity, self-confidence, problem solving, information seeking, reaction to stress and risk taking. With the advent of Lifeskills, Profiling and

many other innovations related to personal development, it would seem to be a useful addition to be able to identify the degree of HEALTH LOCUS OF CONTROL held by individuals, gender groups, class or year groups at school.

WHAT DO THE SCALES ACTUALLY MEASURE?

The scales used in this questionnaire (Appendix (i)) measure the existence of three characteristics:

1. INTERNALITY (personal control)

2. Dependency upon POWERFUL OTHER PEOPLE

3. Dependency upon CHANCE, FATE or LUCK

A pupil may record a high score on one scale for some issues and low on the same scale for other issues. Dependency may well vary according to circumstances rather than be a general disposition. This requires a precise analysis of results if meaningful individual or group support/discussion is to follow.

WHAT USES DO THE SCALES SERVE?

In a constantly changing world young people more than ever before need to be aware of the conflicting pressures upon them and be helped to resolve them. An understanding of oneself and external influences cannot but help this process of growth and decision-making.

The Health Locus of Control Scales provide an opportunity for focusing young adults attention upon these processes in a caring and helpful educational environment. The scales will assist pupils in

clarifying their own feelings whilst teachers will add to their reservoir of knowledge about individuals and groups of pupils. Since the scales are associated with many aspects of life, particularly that of self-determination, they have many uses. For instance:

1. Assessing changes as a result of a health education/personal education programme.

2. Assessing development during school life (e.g. a longitudinal study from first year entry).

3. Comparing tutor, class or gender groups.

4. Identifying individuals who may be perceived as being in need of further help with growth towards self-reliance (and independence) or with interpersonal relationships.

WHAT ISSUES ARE INVOLVED?

The issues (or constructs) used in these scales relate to physical, social and emotional aspects of health. Constructs incorporated in the scales are:

Physical fitness
Physical appearance
Acceptance by friends
Disagreeing with friends
Sorting out worries
Contentment

THE QUESTION FORMAT

All 48 questions relate to the six constructs mentioned above. Eighteen questions cover the constructs in a general (or philosophical) approach and eighteen questions embrace the same constructs in specific situations. The remaining twelve items probe the valuation placed by pupils upon the various constructs. There are therefore six questions on each construct, as shown below for PHYSICAL FITNESS:

i) Being physically fit is a matter of luck.

ii) Whether I am physically fit depends more upon me than anything or anyone else.

iii) I would not be able to get fitter than I am now unless someone helped me.

IF YOU HAD A FITNESS TEST COMING AT SCHOOL FOR A TUTOR GROUP COMPETITION WOULD YOU:

iv) Just hope that things go well on the day?

v) Decide that only you could get yourself fitter for the test?

vi) Decide that only someone else could get you fitter for the test?

Questions i) to iii) cover the general approach whilst questions iv) to vi) relate to a specific situation. Furthermore within each sub group of three questions it can be seen that:

a) one question is phrased in an INTERNAL direction

b) one question is phrased in a POWERFUL OTHERS direction

c) one question is phrased in a CHANCE direction

Questions 1-36 can therefore be categorised across the six constructs to form the three health locus of control scales as follows:

a) INTERNAL Scale - Questions 2, 5, 7, 10, 15, 18, 20, 23, 25, 28, 33 and 35

b) POWERFUL OTHERS Scale - Questions 3, 6, 8, 11, 13, 16, 21, 22, 26, 29, 31 and 36

c) CHANCE Scale - Questions 1, 4, 9, 12, 14, 17, 19, 24, 27, 30, 32 and 34

The six questions relating to each construct are integrated with all other questions. For instance the six FITNESS questions mentioned earlier are numbered 1, 7, 13, 19, 20 and 21 in the questionnaire (see Appendix (i)).

ADMINISTERING THE SCALES

During the development programme questionnaires were always completed anonymously which, according to pupils, was preferable to names being recorded. Since validity is clearly a crucial factor in any subsequent analysis a degree of confidentiality should be retained.

A relaxed atmosphere should also be created by the 'administrator' with reassurance that the exercise is not a test. A degree of formality is however required in completing questionnaires in order to avoid biased responses following pupil-talk or 'copying'. Pupils should be reminded that there is nothing wrong in using the NOT SURE box if they are uncertain of their feelings. In the same way they

should make whatever other response may best reflect their true belief.

Though understanding of concepts and wording was tested in the development programme some pupils may require help in this respect. Such assistance should not affect choice of response and should therefore be given if necessary.

Pupils should be asked, upon completion, to check carefully that no question (or page) has been unintentionally missed or that not more than one tick has been placed on any one line.

ANALYSING THE SCALES

A score for each pupil on all three scales may be obtained by totalling the number of responses to the questions which comprise each scale. This may be a simple calculation of ticks for each box. Alternately a numerical system may be employed from 7 for a "strongly agree" response to 1 for a "strongly disagree" response. A data sheet (see Appendix (ii)) may be used for recording scores and to facilitate any statistical tests which are required (e.g. Pearson Correlation Coefficient, T-Test).

Whether the results are compiled manually by addition or more rigorously through a scoring procedure as described, the opportunity is presented for scale profiles to be produced for each pupil. Each scale profile may show variation according to the different issues or circumstances portrayed. Therefore the same pupil may display high degrees of dependency in certain situations and high internality in others. Conversely little or no such variation or discrimination may exist with other pupils.

In all instances the information obtained will form a basis for further discussion and teaching on an individual or group basis.

WHAT ARE YOU TRYING TO ACHIEVE?

It is very important that Users of this programme consider their objectives when deciding to administer the scales with pupils. In seeking to contribute to personal development the scales have been designed to identify particular characteristics or beliefs. It is very much the view of the author however that the aim of administration is to offer alternatives to pupils rather than seek to prescribe a particular ideology. In this way cultural and individual differences will be respected in their own right.

In seeking to encourage pupils to consider alternative viewpoints the positive benefits of other options should be emphasised rather than any perceived negative effects of beliefs held. Remember however that extremism at either end of the 'internal' or 'external' continuum may be unhealthy, leading to isolation (unsociability) and over-dependence (vulnerability) respectively. Movement in a particular direction may therefore be a more desirable goal than total 'conversion'. Equally the capacity to discriminate between when to seek guidance, when to take full responsibility and when to chance one's luck is an important characteristic to develop in young people.

It would be a misuse of these scales if they were used to reinforce any political ideology or philosophical dogma. They have been designed to assist the process of personal development, hopefully by stimulating pupils to consider both "who they are" and "who they would like to be". It is the author's strong contention that the

former is in itself a valuable exercise whilst the latter gives rise to new aspirations, goals and purpose in life.

Appendix (i)

GOOD HEALTH SURVEY

Boy or Girl .....

Date of birth .....

This is NOT a test. It is an attempt to find out what your opinions and beliefs are about health. There are no right or wrong answers to the questions being asked.

Please answer the questions according to your true feelings

THANK YOU FOR YOUR HELP

Answering the questions

1. The questions that follow ask you to say whether you agree or disagree with something. There are 3 ways of agreeing or disagreeing

   STRONGLY means "very much" or "a great deal"

   SLIGHTLY means "only a bit" or "just a little"

   AGREE (or DISAGREE) means somewhere between STRONGLY and SLIGHTLY

2. If you are not certain what you feel in answer to any question, place a tick in the NOT SURE box against that question.

3. If you do not understand a question or cannot answer it for any other reason LEAVE ALL THE BOXES BLANK against that question.

TRY THIS SAMPLE QUESTION

PLACE A TICK IN ONE OF THE BOXES	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
I am always glad to return to school after the holidays							

PLEASE DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ONLY ON THE SAME LIN

		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
1	Being physically fit is very much a matter of luck							
2	I can do very much to make myself look good to other people							
3	I don't have any say in whether or not my friends accept me.							
4	Whether I agree with my friends depends upon the mood we happen to be in at the time.							
5	If I am worried about something I feel that only I myself can sort it out.							
6	Whether I am happy or not depends more upon how people treat me than anything else.							
7	Whether I am physically fit depends more upon me than anything or anyone else.							
8	Whether or not I look good to others depends more upon how they judge me than what I do for myself.							
9	Being accepted by my friends is more a matter of chance than anything else.							
10	It is me who decides whether my friends and I agree about something.							
11	If I am worried about something I feel that only someone else can sort it out for me.							
12	If my 'stars' say I am going to be happy thats more important than what I or other people do to make me happy.							
13	I would not be able to get fitter than I am now unless someone helped me.							
14	Good looks are something that I either have or haven't from birth and can't do anything about.							
15	I can do very much to get my friends to accept me.							
16	My friends decide whether or not we agree about something.							
17	The best way to sort out worries is to just wait and see how things turn out in the end.							
18	If I am happy its usually due to my own efforts rather than anything else.							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ONLY ON THE SAME LINE

		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
	IF YOU HAD A FITNESS TEST COMING AT SCHOOL FOR A TUTOR GROUP COMPETITION would you:							
19	do nothing and just hope that things go well on the day?							
20	decide that only you could get yourself fitter for the test?							
21	decide that only someone else could get you fitter for the test?							
	IF YOU HAD TO GO FOR AN INTERVIEW would you:							
22	decide that you needed someone else's advice about your looks and appearance?							
23	think that you were quite capable of deciding for yourself how to dress and appear?							
24	decide that your appearance wouldn't make any difference to how you got on?							
	IF SOME FRIENDS WERE TRYING TO GET YOU TO DRINK SOMETHING ALCOHOLIC THAT YOU DIDN'T WANT would you:							
25	refuse even if it meant that you might no longer be accepted by them?							
26	drink it to help you be accepted by them?							
27	hope that something happened to help you get out of drinking it?							
	IF YOU WERE DISCUSSING SOMETHING IMPORTANT WITH FRIENDS AND YOUR OPINIONS WERE DIFFERENT would you:							
28	openly disagree with your friends?							
29	agree with them for some reason?							
30	hope that something caused the conversation to end?							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ONLY ON THE SAME LI

		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
	IF YOU WERE WORRIED ABOUT A PROBLEM WITH YOUR HOMEWORK would you:							
31	decide that only someone else could help you solve the problem?							
32	just hope that by chance something came into your mind?							
33	decide to keep trying until you solved it on your own?							
	IF SOMETHING HAPPENED AT SCHOOL THAT REALLY PLEASED YOU would you:							
34	put it down to good luck alone?							
35	put it down to your own efforts alone?							
36	put it down to the help you had been given by other people?							

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ONLY ON THE SAME LINE

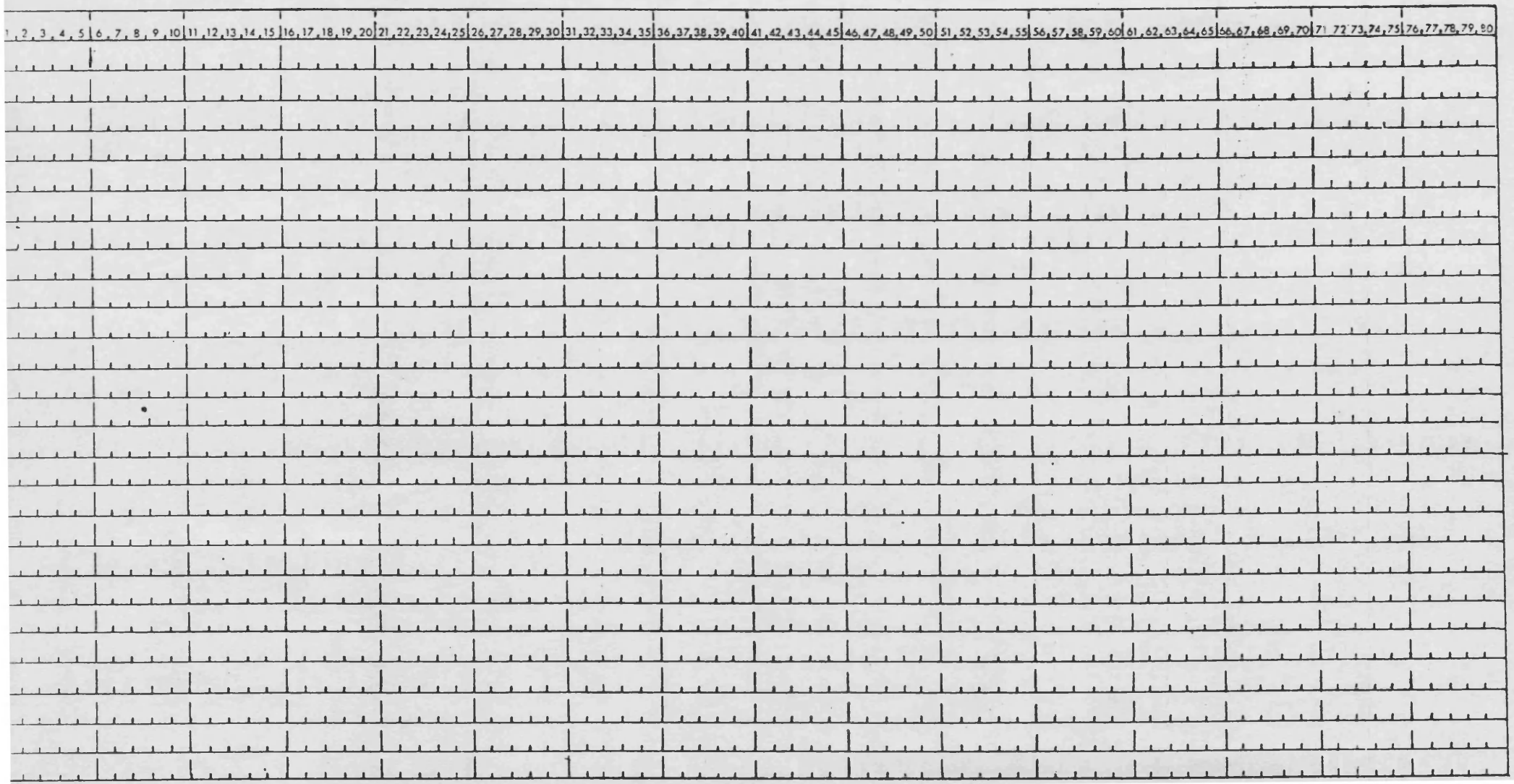
		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
	THESE THINGS ARE VERY IMPORTANT TO ME							
37	Being physically fit							
38	Looking good to other people							
39	Being accepted by my friends							
40	Agreeing with my friends							
41	Sorting out any worries that I have							
42	Being happy							
43	A fitness test in a tutor group competition							
44	Looking good when being interviewed							
45	Drinking alcohol if my friends want me to							
46	Agreeing with my friends in a conversation							
47	Solving any problems with my homework							
48	Good things happening at school							

Appendix (ii)

Author _____ Date _____

DATA

Title _____ Page _____ of _____



APPENDIX II

HEALTH LOCUS OF CONTROL

USER'S GUIDE

Evaluation

1. Was the purpose of the Guide made clear?

---

2. Was the subject matter (Health Locus of Control) explained sufficiently?

---

3. Was more information needed on any particular section(s)?

---

4. Were any sections too long or unclear?

---

5. Should any sections be deleted?

---

6. Was more information needed, about the scales?

---

7. Was the question format and categories made clear?

---

8. Should the sequence of sections be altered in any way?

---

9. Any comments re the plans for Appendices

---

10. Any other suggestions or comments

_____

_____

_____

_____

_____

_____

Many thanks again for your time and support.

APPENDIX III

HEALTH LOCUS OF CONTROL

USER'S GUIDE

PURPOSE OF THE GUIDE

This Guide has been developed to explain the potential use of new scales designed to measure "HEALTH LOCUS OF CONTROL' in adolescents aged 13-14 years. As well as describing the structure of individual components the Guide also offers suggestions for administering the scales together with ideas for analysing results. The scales have been designed to contribute to the personal development of young people. In particular they have been tested with, and produced for, pupils aged 13 and 14. Though the focus is upon health constructs it is also important to consider the way in which the scales will be used in a teaching situation. Whether the opportunity for discussing the various issues is taken with individual pupils or on a group basis it is hoped that respect for alternative viewpoints will prevail. Such discussion will facilitate greater understanding both of self and of fellow pupils and teachers.

WHAT IS HEALTH LOCUS OF CONTROL?

Locus of control may be seen as

> "a tendency to believe that important outcomes in life are either within one's own control or are determined by external factors such as chance or other people."*

When the focus of attention relates to matters of health the more specific HEALTH LOCUS OF CONTROL comes into operation.

The notion of perceived control over events is extremely wide-ranging and may be applied to almost every aspect of life both within and outside schooling. It has consequently been widely researched and associated with issues such as self-determination, conformity, self-confidence, problem solving, information seeking, reaction to stress and risk taking. With the advent of Lifeskills, Profiling, and many other innovations related to personal development, it would seem to be a useful addition to be able to identify the degree of HEALTH LOCUS OF CONTROL held by individuals, gender groups, class or year groups at school.

* Wallston, K.A. and Wallston, B.S. (1978) Health Education Monographs, 6(2)

WHAT DO THE SCALES ACTUALLY MEASURE?

The scales used in this questionnaire (Appendix (i)) measure the existence of three characteristics:

1. INTERNALITY (Personal Control)

2. Dependency upon POWERFUL OTHER PEOPLE

3. Dependency upon CHANCE or LUCK

A pupil may record a high score on one scale for some issues and a low score on the same scale for other issues. Dependency may well vary according to circumstances rather than be a general disposition. This requires a precise analysis of results if meaningful individual or group support/discussion is to follow.

WHAT USES DO THE SCALES SERVE?

In a constantly changing world young people more than ever before need to be aware of the conflicting pressures upon them and be helped to resolve them. An understanding of oneself and external influences cannot but help this process of growth and decision-making.

The Health Locus of Control Scales provide an opportunity for focussing young people's attention upon these processes in a caring and helpful educational environment. The scales will assist students to clarify their own feelings whilst teachers will add to their reservoir of knowledge about individuals and groups of pupils. Since the scales are associated with various aspects of life, particularly that of self-determination, they have many uses. For instance with regard to health locus of control:

1. to identify beliefs held by individual pupils and groups of third year pupils;

2. to make comparisons between individuals, groups, years and schools;

3. to record changes in beliefs over periods of time irrespective of causation;

4. to act as a diagnostic tool for identifying extremes in belief systems;

5. to confirm or challenge the pre-existing opinions of teachers regarding pupils and groups;

6. to contribute to profiling and assessment systems;

7. to encourage curriculum development initiatives based upon planned programme objectives;

8. to provide a forum for discussing the case for and against alternative beliefs;

9. to contribute to the understanding of self by pupils; and

10. to provide further opportunity for the development of characteristics such as self-esteem and confidence in young people.

WHAT ISSUES ARE INVOLVED?

The issues raised in these scales relate to physical, social and emotional aspects of health. Constructs incorporated in the scales are shown below:

Physical fitness

Physical appearance

Acceptance by friends

Disagreement with friends

Sorting out worries

Contentment

THE QUESTION FORMAT

All 48 questions relate to the six constructs mentioned above. Eighteen questions cover the constructs in general terms and eighteen questions embrace the same constructs in specific situations. The remaining twelve items probe the valuation placed by pupils upon the various constructs. There are therefore six questions on each construct, as shown below for PHYSICAL FITNESS.

a) Being physically fit is a matter of luck.

b) Whether I am physically fit depends more upon me than anything or anyone else.

c) I would not be able to get fitter than I am now unless someone helped me.

IF YOU HAD A FITNESS TEST COMING AT SCHOOL FOR A TUTOR GROUP COMPETITION WOULD YOU:

d) Just hope that things go well on the day?

e) Decide that only you could get yourself fitter for the test?

f) Decide that only someone else could get you fitter for the test?

Questions a) to c) cover the general approach whilst questions d) to f) relate to a specific situation. Furthermore within each sub group of three questions it can be seen that:

one question is phrased in an INTERNAL direction;

one question is phrased in a POWERFUL OTHERS direction; and

one question is phrased in a CHANCE direction.

Questions 1-36 can therefore be categorised across the six constructs to form the three health locus of control scales as follows:

INTERNAL Scale - Questions 2, 5, 7, 10, 15, 18, 20, 23, 25, 28, 33 and 35;

POWERFUL OTHERS Scale - Questions 3, 6, 8, 11, 13, 16, 21, 22, 26, 29, 31 and 36; and

CHANCE Scale - Questions 1, 4, 9, 12, 14, 17, 19, 24, 27, 30, 32 and 34.

The six questions relating to each construct are integrated with all other questions. For instance the six FITNESS questions mentioned earlier are numbered 1, 7, 13, 19, 20 and 21 in the questionnaire (see Appendix (i)).

ADMINISTERING THE SCALES

During the development programme questionnaires were always completed anonymously which, according to pupils, was preferable to names being recorded. A decision must be made whether to have questionnaires completed anonymously or not. Whilst the former action may encourage

pupils to respond completely openly the latter system would aid comparison of individuals and groups or help in discussion with individual pupils. A relaxed atmosphere should also be created by the 'administrator' with reassurance that the exercise is not a test. A degree of formality however is required in completing questionnaires in order to avoid biased response following pupil-talk or 'copying'. Pupils should be reminded that there is nothing wrong with using the NOT SURE box if they are uncertain of their feelings. In the same way they should make whatever other responses may best reflect their true beliefs. It is vital that pupils are encouraged to realise that there are NO RIGHT OR WRONG ANSWERS to the questions. Though understanding of concepts and wording was tested in the development programme some pupils may require help in this respect. Such assistance will not affect choice of response and should therefore be given if necessary. Clarification to remove any ambiguity or misunderstanding is important. Pupils should be asked, upon completion, to check carefully that no question (or page) has been unintentionally missed or that no more than one tick has been placed on any one line.

A procedure for administering the scales is shown in Appendix (iii).

ANALYSING THE SCALES

A score for each pupil on all three scales may be otained by totalling the number of responses to the questions which comprise each scale. This may be a simple calculation of ticks for each box. Alternately a numerical system may be employed from 7 for a "strongly agree" response to a 1 for a "strongly disagree" response. A data sheet (see Appendix (ii)) may be used for recording scores and to facilitate any

calculations which the User may wish to undertake. The data sheet illustrates the scores for the responses shown on the questionnaire (Appendix (i)). Columns 49 and 50 could, in addition, be used for coding the gender or class group involved in the enquiry.

The opportunity is presented for scale profiles to be produced for, or by, each pupil as a result of the scoring procedure adopted. Each scale profile may show variation according to the different issues or circumstances portrayed. Therefore the same pupil may display high degrees of dependency in certain situations and high internality in others. Conversely little or no such variation or discrimination may exist with other pupils.

It is important to avoid assuming, when analysing responses, that a pupil scoring twice that of another pupil has twice the degree of "locus of control" to the fellow pupil. The scores attached to responses are not in any specific ratio. Pupils' scores should therefore serve as guides for the teacher and be used as triggers for further discussion rather than ends in themselves.

Appendix (i)

GOOD HEALTH SURVEY

Boy or Girl .....

Date of birth .....

This is NOT a test. It is an attempt to find out what your opinions and beliefs are about health. There are no right or wrong answers to the questions being asked.

Please answer the questions according to your true feelings

THANK YOU FOR YOUR HELP

Answering the questions

1. The questions that follow ask you to say whether you agree or disagree with something. There are 3 ways of agreeing or disagreeing

   STRONGLY means "very much" or "a great deal"

   SLIGHTLY means "only a bit" or "just a little"

   AGREE (or DISAGREE) means somewhere between STRONGLY and SLIGHTLY

2. If you are not certain what you feel in answer to any question, place a tick in the NOT SURE box against that question.

3. If you do not understand a question or cannot answer it for any other reason LEAVE ALL THE BOXES BLANK against that question.

TRY THIS SAMPLE QUESTION

PLACE A TICK IN ONE OF THE BOXES	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
I am always glad to return to school after the holidays							

PLEASE DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE [illegible] ON THE SAME L

		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
1	Being physically fit is very much a matter of luck			✓				
2	I can do very much to make myself look good to other people	✓						
3	I don't have any say in whether or not my friends accept me.						✓	
4	Whether I agree with my friends depends upon the mood we happen to be in at the time.				✓			
5	If I am worried about something I feel that only I myself can sort it out.						✓	
6	Whether I am happy or not depends more upon how people treat me than anything else.	✓						
7	Whether I am physically fit depends more upon me than anything or anyone else.					✓		
8	Whether or not I look good to others depends more upon how they judge me than what I do for myself.		✓					
9	Being accepted by my friends is more a matter of chance than anything else.					✓		
10	It is me who decides whether my friends and I agree about something.				✓			
11	If I am worried about something I feel that only someone else can sort it out for me.			✓				
12	If my 'stars' say I am going to be happy thats more important than what I or other people do to make me happy.	✓						
13	I would not be able to get fitter than I am now unless someone helped me.						✓	
14	Good looks are something that I either have or haven't from birth and can't do anything about.			✓				
15	I can do very much to get my friends to accept me.					✓		
16	My friends decide whether or not we agree about something.						✓	
17	The best way to sort out worries is to just wait and see how things turn out in the end.		✓					
18	If I am happy its usually due to my own efforts rather than anything else.					✓		

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK IN ONE BOX ONLY ON THE SAME LINE

IF YOU HAD A FITNESS TEST COMING AT SCHOOL FOR A TUTOR GROUP COMPETITION would you:

		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
19.	Just hope that things go well on the day?		✓					
20.	Decide that only you could get yourself fitter for the test?				✓			
21.	Decide that only someone else could get you fitter for the test?							✓

IF YOU HAD TO GO FOR AN INTERVIEW would you:

22.	Think that you needed someone else's advice about how to dress and appear?		✓					
23.	Think that you were quite capable of deciding for yourself how to dress and appear?					✓		
24.	Just hope that your appearance gave a good impression?			✓				

IF A FRIEND ASKED YOU TO DO HIM (OR HER) A FAVOUR would you:

25.	Do it because you always like to help your friends?				✓			
26.	Do it because it would help you to be accepted by your friend?							✓
27.	Hope that your friend forgot about the favour?	✓						

IF YOU WERE DISCUSSING SOMETHING IMPORTANT WITH FRIENDS AND YOUR OPINIONS WERE DIFFERENT would you:

28.	Be prepared to disagree with your friends?		✓					
29.	Be prepared to accept your friends' opinions?					✓		
30.	Hope that something caused the conversation to end?							✓

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK
IN ONE BOX ONLY ON THE SAME LINE

	STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
IF YOU WERE WORRIED ABOUT A PROBLEM WITH YOUR HOMEWORK would you:							
1. Decide that you needed someone to help you solve the problem?		✓					
2. Just hope that by chance something came into your mind?				✓			
3. Decide to carry on working at it on your own?				✓			
IF SOMETHING HAPPENED AT SCHOOL THAT REALLY MADE YOU HAPPY would you:							
4. Think it was mainly due to luck?		✓					
5. Think it was mainly due to something you had done rather than anything else?					✓		
6. Think it was mainly due to something other people had done rather than anything else?	✓						

PLEASE ANSWER EACH STATEMENT BY PLACING A TICK
IN ONE BOX ONLY ON THE SAME LINE

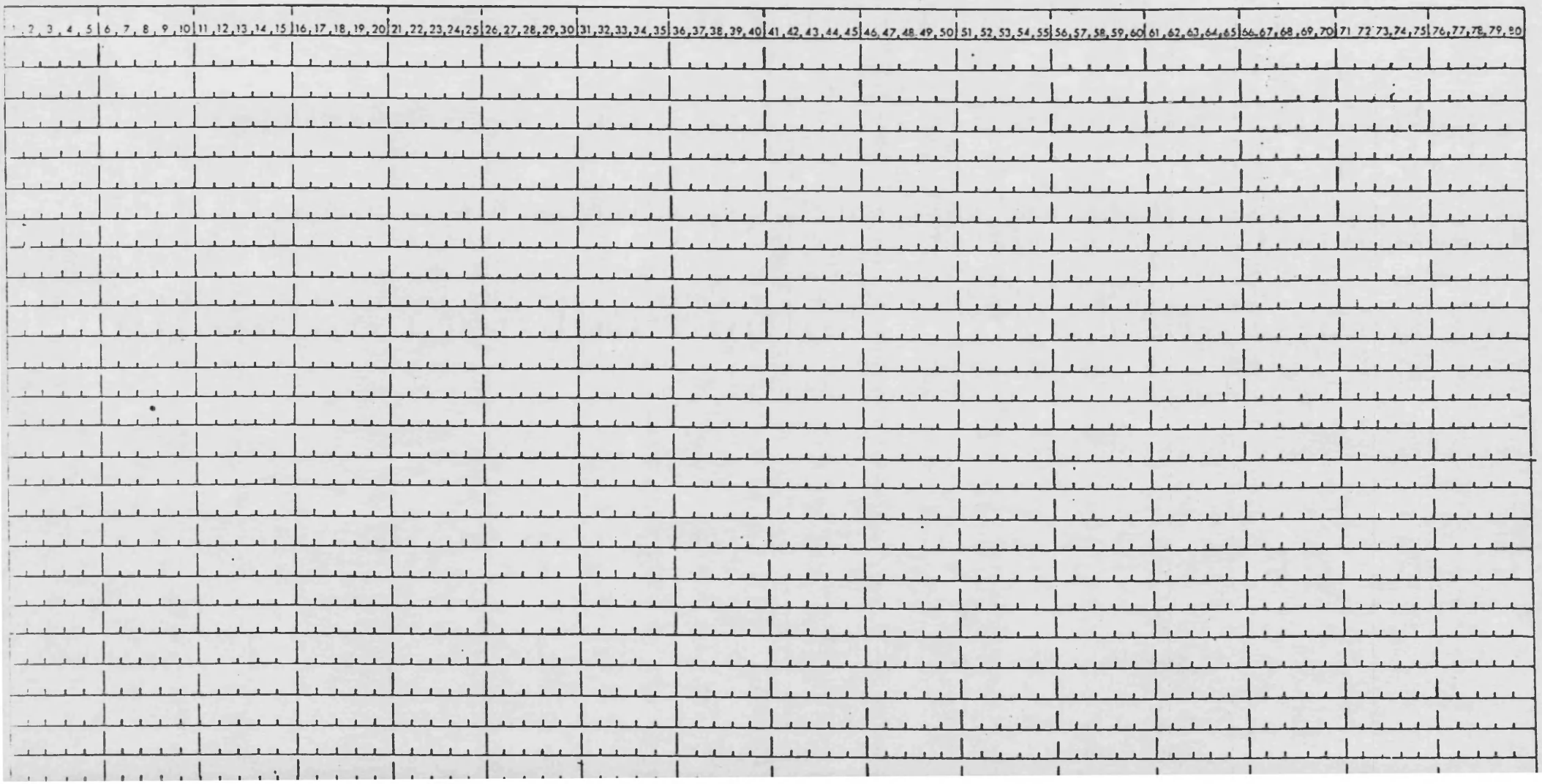
		STRONGLY AGREE	AGREE	SLIGHTLY AGREE	NOT SURE	SLIGHTLY DISAGREE	DISAGREE	STRONGLY DISAGREE
	THESE THINGS ARE VERY IMPORTANT TO ME							
1	Being physically fit		✓					
3	Looking good to other people	✓						
7	Being accepted by my friends			✓				
9	Being prepared to disagree with friends				✓			
11	Sorting out any worries that I have		✓					
12	Being happy	✓						
15	A fitness test in a tutor group competition					✓		
16	Looking good when being interviewed				✓			
5	Doing a favour for a friend		✓					
6	Being prepared to disagree with my friends in a conversation					✓		
7	Solving any problems with my homework						✓	
8	Good things happening at school							✓

Appendix (ii)

Author _____ Date _____

DATA

Title _____ Page _____ of _____



Appendix (iii)

PROCEDURE FOR ADMINISTRATION

1. Though this is NOT A TEST it is necessary to create a formal atmosphere in order to prevent any pupil interaction.

2. Explain to pupils why you are carrying out the exercise and ask for their co-operation.

3. Reassure pupils that there are no right or wrong answers and that they are not being tested.

4. It is recommended that the questionnaires are completed anonymously. If you wish names to be recorded explain why this is necessary.

5. Tell pupils that as you are interested in their opinions would they please answer each question according to their true belief.

6. Difficulties of comprehension or meaning should be clarified since this is an enquiry into beliefs rather than readability. Ambiguities should therefore be eliminated.

7. No more than one tick should be placed on any one line.

8. Ticks must be made within the box.

9. If pupils say, for example, "it all depends" they should select the box that best fits their general belief about that topic. If they are unable to do this then a tick should be placed in the NOT SURE box.

10. There is no time limit designed into the exercise unless you wish to do so.

11. Pupils should check, upon finishing, that

    a) no more than one tick has been placed on any one line

    b) no line has been missed UNINTENTIONALLY

    c) no page has been missed UNINTENTIONALLY

12. Thank the pupils for their co-operation and collect the questionnaires.

13. Explain what you are going to do with the questionnaires.

14. Discuss any aspects of the questionnaire or the exercise with pupils if you, or they, so wish.

CHAPTER EIGHT

THE WAY FORWARD

8.1 EVALUATING THE RESEARCH PROGRAMME

It is important to carry out an evaluation of the programme in order to assess the extent to which its objectives have been reached. The exercise also helps to identify those aspects which proved less successful, to offer explanations why this was so and to suggest how improvements could be made in future. Finally an evaluation enables one to consider methodology so that lessons may again be learned by those wishing to administer the scales or develop the programme in other directions.

The full results of each phase of the programme were reported and discussed in Chapters 4-6. The latter chapter also compared its findings to those of the preceding phases thereby collating the various results. Rather than re-examine these findings once again it is more appropriate to concentrate upon the original aims of the programme (described in section 3.3) and their achievement or otherwise.

The primary aim (1) of the project was to develop health locus of control scales to a satisfactory level of validity and reliability. At the same time, however, it was also necessary for the scales to represent a holistic view of health rather than the narrow perspective reflected in existing scales. The broader range of dimensions involved presented additional problems for establishing reliability both within and between the three scales.

The summary of findings relating to the scales (6.5.4) supports the view that both reliability and validity were fully demonstrated as a

result of the re-wording of certain items and integration of all previous phases (3.4.5.11). A concurrent validity exercise (5.3.4) was carried out using the Nowicki-Strickland Scale and the positive correlation established with it further supports the validation of the new scales. One example of the successful development was the highly significant positive correlation ($P<.001$) found between the POWERFUL OTHERS and CHANCE scales, both being seen as components of an external, or dependency, disposition in people.

Items were designed in such a way as to represent a general (or ideological) and a situational (or specific) aspect of each construct. For instance, beliefs were sought on a general view of fitness as well as a fitness test in a tutor group competition. The findings (Table 14) revealed a series of positive correlations between these pairs of items but at best it left a relatively low level of prediction (6.5.5.3.2), supporting the case for retaining questions representing both contexts in the scales (AIM 10).

The reliability tests established for the scales in all three phases (6.5.1.20; 6.5.2.18 and 6.5.3.19) suggests the existence of dispositions in people to some extent.

However there is evidence from individual profiles (6.5.22) that pupils vary somewhat within a locus of control scale (e.g. CHANCE) from one item to another on occasions. There is a disposition therefore but it is not highly consistent and does depend, in some measure, upon the particular issue in question or the situational variables (AIM 9).

The results of each phase, especially the main survey, demonstrated a high valuation of the constructs incorporated in these scales

(6.5.18.15). This was further supported by the highly positive correlations established between the valuation of the constructs in their general and specific contexts (6.5.18.4). Such findings suggest that the constructs are relevant to the target population and achieve this aim (7) quite successfully.

The extent to which pupils desire control over these constructs was probed in the Prototype Exercise. Table 1 revealed a high level of desire for control of all constructs whilst such desire was also shown subsequently (4.7.15.7) to be highly associated with the valuation of the constructs (AIM 8).

Undoubtedly the research programme collected a wealth of information concerning adolescents' health locus of control beliefs (AIM 2). It showed for instance that low ability is associated with greater dependency upon chance or powerful others, it revealed that control over personal fitness is highly desired and perceived whilst it also emphasised that adolescents are learning to be selectively dependent upon other people. This is but a glimpse of the reservoir of data collected about the pupils and their locus of control beliefs.

Where possible the findings have been compared with those from other studies (AIM 11). In many cases earlier results have been confirmed though this has not always been the case. Internality was found to increase with age in this programme as with other studies (Phares 1976, Rotter 1962). Bialer (1961) established a positive correlation between internality and deferred gratification whilst this programme found a strong positive association between internality and an acceptance that present behaviour could have long term benefits.

Phares (1976) found that externals were more prepared to conform to the views of others. The "DISAGREEING WITH FRIENDS" construct (6.5.14.8) tended to support this finding by showing that internals were far more prepared to disagree than those with a disposition towards the other two scales.

On the other hand whereas Phares found that externals were more prepared to take risks this research established a positive correlation between risk taking and all three locus of control scales (6.5.9.3-6.5.9.5). In addition the positive association found between a valuation of new experiences and internality (6.5.7.2) is somewhat in contradiction to findings which suggest otherwise (Midlarsky, 1971).

Another aim (3) of the original concept was to develop other sub scales incorporating "risk taking", "newness", "susceptibility" and "good health". Though of secondary importance to the main scales they still provided very useful data as individual components of the programme as well as when correlated with the main scales. Though containing very few items good Alpha reliabilities were established for these scales as a result of re-wording and refinement. Clearly there is scope for further improvement in this area to build upon the progress made to date.

A series of interesting findings was established between the health locus of control scales and these sub scales (AIM 5). For instance internals were significantly associated, positively, with a valuation of good health whilst chance was found to have quite the opposite relationship (6.5.10). This latter finding was supported by a similar

negative correlation between chance and "susceptibility", indicating a rejection of cause and effect either of an immediate or delayed nature. A highly positive correlation was shown between "risk taking" and "newness" suggesting that a similar belief was held about each construct by pupils in this investigation.

Conceptualisation of health (AIM 4) was examined in some detail in all phases of the research programme. In general it was revealed that pupils perceive health in multidimensional terms embracing both a social and mental component. This wider perception was not however at the expense of traditional concepts such as "being fit" or "absence of illness" though the precriptive notion of health was consistently rejected (6.5.19.11).

The relationship between the main scales and concepts of health was also studied during this programme (AIM 6). When categorising the 14 concepts (6.5.20) it was found that the "prescriptive" category established a positive correlation ($P<.001$) with the "powerful others" scale, reinforcing the notion that both variables possess a high degree of dependency upon other people. Similarly the "social" category, involving interpersonal relationships, was shown to have a closer association with the external "powerful others" and "chance" scales than the internal scale.

Typology (AIM 13) was considered briefly as a means of generalising about locus of control. There are inherent dangers in such an approach for it has become clear that individuals display some variation in their control expectations or perceptions from one situation to another. The classification of types (6.5.22.3) should only be seen as provisional at this stage rather than anything else.

A more accurate representation of this variation in health locus of control may be demonstrated through the construction of profiles (AIM 12). This approach enables individuals to become aware of aspects of their life in which they have less control than in other areas. Such profiles may be norm-referenced (using class or year profiles) or criterion-referenced by using the individual's responses only. This system also enables change over time to be recorded and used as a basis for further discussion with the pupils concerned.

To aid the administration of the scales a protocol (AIM 16) and a computer programme (AIM 15) were developed as part of the research exercise. The former was built into the questionnaire design as well as being discussed in more detail in the User's Guide. The computer programme was refined during the various phases of research to enable the required data analysis to be undertaken. Any further administration of the scales in future could therefore make full use of both developments in facilitating the programme being undertaken.

The final aim (14) was to produce a User's Guide that would help potential users to understand the purpose of the scales and suggest various uses for them in an educational context. At the same time the Guide would attempt to discourage any misuse of the scales, unintentionally or otherwise. The User's Guide (Chapter 7) has been developed and will, hopefully, serve the purpose for which it was designed.

Methodological Issues

In many respects therefore it can be claimed that the formalised aims of the research programme have been explored and achieved. There was however a series of unstated aims, incorporating the methodology employed, which also needs to be considered in this evaluation exercise. The initial discussion with young people prior to designing the questionnaire was extremely important in identifying salient features of health, in its widest sense, to them. The significance of this exercise was clearly demonstrated by the high valuation accorded, subsequently, to the constructs employed in the research (6.5.18.5-6.5.18.7).

Teachers were involved at various stages of the programme. The view of one group of teachers attending an in-service training course were sought regarding the value of the research (3.4.5.2) whilst other teachers were asked for comments on later developments in the programme. There would have been advantages in retaining an advisory group of teachers to follow the research throughout but such an opportunity was not easily available to a researcher not employed directly in the education sector.

Pupils played a key role in trialling the early questions and later in re-wording items identified as weak in terms of their correlation with the scale to which they belonged. Again the value of this approach was demonstrated by the improved levels of reliability established and the apparent relevance of the enquiry to young people of this age group (6.5.18.15). Teachers deciding to administer these or similar scales would have the added advantage of improving even further their

salience by consulting and involving pupils at all stages of their programme.

A questionnaire was used in this programme so that statistical analyses could be undertaken and a measuring instrument developed for use by others. Some teachers may feel that a more informal method would be more suitable in their circumstances. A questionnaire however may help some pupils to express views free of any social pressure, imaginary or otherwise, existing in relationships with others. It also enables a record to be constructed which may later form the basis of further discussion on a personal basis with pupils. Probably a combination of formal and informal methods is the best solution though the precise balance will be a matter of judgement for those directly involved in the particular exercise.

One point of criticism is that pupils were not always prepared well by their teachers for the enquiry. During the structured interviews (5.5) it emerged that a brief mention had been made of a "health survey" to be carried out with the pupils in the following lesson. If anything this had created a little anxiety and negative feeling towards the exercise, though the experience of completing the questionnaire subsequently allayed the concern and low level of motivation. This was probably due to an external researcher carrying out the task and would, hopefully, be eliminated by teachers undertaking similar research themselves, being able to prepare their pupils properly.

The structured interviews in fact proved highly successful in probing deeper into pupils' feelings about the exercise and the constructs in

question. Furthermore it led to other relevant issues (such as relationships and communication with teachers) being raised in discussion. There is clearly scope for school-based administration of the scales to incorporate more interviews of this nature which enrich data from the formal questionnaire.

With regard to validating the scales the two exercises undertaken (4.7.16 and 5.3.4) proved highly successful. Both provided evidence of validity in their own respective areas of concern, the former relating to conceptualisation of terms and the latter to comparative scales developed in the United States.

With regard to the questionnaire design the response system experiment (4.7.18) showed conclusively that a NOT SURE column was not only desirable but more accurate in representing the beliefs held by pupils. Equally the card index system (3.4.5.11), designed to retain the best features of all the research phases in determining item pools, was proven to have been successful as a result of improved reliability levels (6.5.1-6.5.3).

Finally, in terms of methodology, there were problems associated with teachers being asked to administer the scales when not directly involved in them (6.5.21.2.8). This led to an increased likelihood of pages being left blank unintentionally by pupils and probably reflected upon low levels of teacher motivation. Where teachers choose to administer the scales themselves in future as a contribution to their own programme the problem should be easily resolved.

In general therefore it would be reasonable to claim that the majority of aims, both of a formal and informal nature, have been successfully

achieved during this research programme. Certainly there are lessons to be learned and further improvements to be made. Nevertheless there is satisfaction to be gained from the results achieved which justify the research design and the modifications made later during the development programme.

8.2 SUGGESTIONS FOR FURTHER RESEARCH

The research programme produced a considerable depth of information about adolescents' health locus of control beliefs as well as being an exercise in developing the scales in question. It is valuable therefore to examine some of these issues in order to consider their implications, whether the research should be repeated, what improvements could be made to content or methodology and which other relevant areas would be worthy of investigation in future.

Academic rating was shown to be an important variable, in the Prototype Exercise (4.7.1.8; 4.7.3.12), with regard to health locus of control. Though it affected females in particular, the strong association established suggests that the variable may be an important determinant of control expectations in pupils rated as low academic ability. Whether or not such rating is justified the experience of being so labelled may well influence the acquisition of a belief system which apportions responsibility for events to external factors beyond one's personal control. It is undoubtedly an aspect of schooling that is well worthy of inclusion in any similar research being undertaken in future. Teachers would be in a much better position, in fact, to include this variable in their research project than was the case with this programme which mainly had to be carried

out with tutorial groups, considered by the schools to be the most convenient mechanism for the research.

The Prototype Exercise also included a series of questions (4.1-4.6) concerning the extent to which pupils desired control over the six constructs. It was found (4.7.15.5) that high ability was associated consistently with higher desire for control. Since higher ability was also shown to be associated with internality (4.7.1.8) it does appear that pupils so rated have a greater desire for, and perception of, control over these aspects of their lives. Unfortunately these "desire" questions were not retained in later phases since they had established very significant positive correlations with the valuation of constructs (4.7.15.8). However, in retrospect, it would have been useful to have checked whether this relationship was constant rather than assume its presence alongside the valuation variable. Further administration of the scales would therefore benefit from their inclusion besides providing other points for discussion subsequently with individual pupils.

Gender as a variable was never shown to be directly responsible alone for any major trends or findings. The total male and female mean scores were always very similar in each phase of the programme with variation coming within gender and tutorial groups. The one occasion when gender was particularly apparent was in the low ability females during the Prototype Exercise. Even here it could not be demonstrated that gender was the major factor since high ability females were as internal as their male counterparts. It may have been a one-off finding or it could be that gender and low ability fused together in some way to produce a multiple effect. No later repetition of this

finding was possible in the absence of academic rating as a variable. Nonetheless the issue remains an interesting speculation and would be worth eliminating from a researcher's premonition that much remains unsolved on this point at the present time.

Phares (1976) found a strong negative correlation between internals and risk taking but suggested that this may not be so in circumstances where the odds can be calculated. Whereas the Pilot Exercise established a significant negative correlation between these two variables (5.6.5.5) a positive association was found in the main survey. The latter finding could indicate that even those pupils with a tendency towards internality are still attracted, at this stage, towards risk taking behaviour. Evidence in support of this proposition comes from the good positive relationship between the "internal" scale and the "newness" scale (6.5.7.2). There is clear consistency demonstrated in these findings between beliefs relating to experiences or events with unknown factors involved. It may require other situations or issues related to risk-taking to be identified since it may be a question of specific types of risks being associated in either a positive or negative direction with the internal scale (see discussion also in 2.6.2).

The "newness" scale was rather more consistent in being positively associated with the "internal" scale, and negatively associated with the "chance" scale, in both later phases of the research programme. At first glance this may appear rather contradictory. Those pupils with a tendency towards internality may, however, be attracted towards certain forms of new experiences, perhaps as a way of learning more about themselves. Adolescents tending towards chance may not

necessarily be motivated to chance events but merely perceive their world in these terms. Consequently they may not value new experiences as required to do so by the "newness" scale.

There are good grounds, upon reflection, for understanding many of the apparent contradictions in some of these findings. It does require further investigations to be carried out with more detailed follow up with pupils afterwards. The qualitative research may be assisted by extending the item pools in the sub scales which, at most, only contained four items (i.e. "susceptibility" and "good health") in any one scale. Nevertheless these sub scales added much rich data to the other scales and undoubtedly enhanced the value of the research.

The "Conceptualisation of Health" category revealed some fascinating information on pupils' perceptions and their relationship with health locus of control (6.5.19 and 6.5.20). It would be interesting to know, for instance, why the "chance" scale is much less positively associated with an acceptance of many of the concepts of health than the other two scales (6.5.20.14). Achievement is perceived as health moreso by externals than internals for some reason which would benefit from further study. So too would pupils' feelings regarding the social category which defines health in terms of "having good friends", "being admired" and "being liked by people". My suspicion is that many pupils have been rating these concepts in their personal value system as much as confirming whether or not they saw health in these terms. At the present moment in time there is no reason to doubt the validity of the responses. What is being advocated is a continuation of the exercise with additional opportunities being designed into the programme for discussing the findings with pupils on an individual or group basis.

Great possibilities are presented for profile development in health locus of control. A small beginning has been made in this thesis (6.5.22) but it remains a very crude index which requires considerable refinement before being offered to practising teachers. The attraction of profiling is that it is criterion-referenced and helps an individual to become more aware of those areas of his life where he has control and, equally important, where control does not appear to exist. Whatever action, if any, is taken decisions are subsequently made from a more valid basis in terms of personal awareness and understanding.

A longitudinal study, for instance following pupils through a secondary school, would be an excellent exercise in personal development. It would, in particular, reveal how health locus of control varies or persists. It might give further insight into the antecedents of the characteristic and enable teachers to learn which factors are most important in influencing it. Such a study might also indicate which groups of pupils may be in possession of particular types of belief (e.g. continued dependency upon chance) which in turn may reflect school experiences. Pastoral care could be provided to meet specific needs identified or school procedures perhaps modified if shown to promote undesirable effects upon locus of control.

Though a criterion-referenced approach has been advocated there may be some merit in seeking to develop age-group norms in this area. There would appear to be good grounds for only referring groups of pupils' scores for comparison since this, if carried out by individuals, may result in perceived failure and loss of esteem. Group comparisons however may encourage teachers to plan specific learning experiences that aim to promote particular aspects of locus of control.

If carried out sufficiently widely it would be possible to obtain county and regional comparisons. This would be useful in introducing into discussions the cultural influences associated with belief systems and enable pupils to accept more easily the legitimacy of alternative viewpoints. There is clearly a danger of culture clash in this matter as with many other issues in the field of personal and social education. Provided that the teaching is undertaken in a climate of tolerance and consideration for others then little harm will ensue. It does however require a caring and sensitive learning milieu for this type of activity to be successful in terms of the welfare of the pupils involved.

Finally in this section is the clear potential for scales to be developed using health-related constructs other than those incorporated in this research programme. This is no small task if validity and reliability is to be maintained. Given a planned research strategy however it is quite possible for such a development to occur. This would be most rewarding for it would signal that health locus of control had been truly accepted and that it had many other contributions to make to the development of young people.

8.3 DISSEMINATION

Any curriculum development project must be disseminated effectively to teachers if it is to be implemented successfully by them on a permanent basis. Kelly (1982) and Shipman (1973) have clearly shown the problems associated with national projects imposed somewhat from a central position to the periphery. There is often a wide gap between the ideas of a project held by its planners and the realities of its

implementation in the classroom by teachers. Constraints of finance, time and energy often militate against the success of any particular innovation which may be only one of many changes or concerns facing teachers at the time.

Curriculum development has not always received the attention or uptake expected of it. Steadman (1980) found that of sixteen primary school projects, ten were known by less than 20 per cent of headteachers and used in less than 10 per cent of schools. At secondary school level, of 36 funded projects studied 32 per cent of teachers made some use of at least one project. However the majority of projects were used by less than 10 per cent of the relevant teachers. With regard to conditions conducive to implementation the writers concluded:

> "Those which have generated the highest levels of awareness, contact and use by teachers in schools have - with few exceptions - been substantially resourced; had a prolonged period to establish themselves, and adopted a positive and continuous approach to dissemination and the provision of support for teachers."
>
> Steadmans, Parsons and Salter, 1980

Bolam (1982) proposed that change should be perceived as a process which takes place within a social system context. Curriculum innovation in itself involves such a process of change, which is dynamic rather than a single event. People involved in change interact with each other over time and are changed themselves by the experience. Equally the innovation itself should not be regarded as immutable but as an entity which will be adapted and changed over time.

There are many constraints which may hinder the successful implementation of curriculum development. The receptivity of the

headteacher is crucial as is that of the teachers directly involved. Account must also be taken of organisational effects upon timetables, special resources, staff training, continuing support for teachers and many other aspects of school life likely to be affected by the innovation.

This research programme, undertaken and developed on Health Locus of Control, is very much a component of the wider field of personal and social education. It should not be seen in isolation from other innovations recently introduced into this broad area of the curriculum. The dissemination and implementation of the materials therefore should be less distractive and obtrusive of existing curriculum arrangements than with the introduction of those major projects discussed earlier. Nonetheless many of the same basic principles apply at this level and equal consideration must be accorded any inconvenience caused to already overworked teachers by its promotion.

The dissemination of the research findings and development "package" will need to be carried out in a number of ways for optimal uptake to be achieved. Firstly it will be necessary to work closely at all times with the education advisory services of any local authorities involved in using the scales. This in itself will require approaches to be made to chief or senior officers so that they can understand the purpose of the scales in an educational context. If such personnel become convinced that a valuable contribution can be made to the personal education of young people then it is more likely that support will be forthcoming for any dissemination programme involving teaching staff. This initial approach is crucial for the programme and will

require a very persuasive case to be made for attention to be given to the project in competition with many other pressures.

Secondly it is important to stress that the dissemination exercise should, as far as possible, seek out existing opportunities for its implementation rather than expect additional meetings of whatever nature to be arranged, and more to the point, attended. The majority of local education authorities have now a formal programme of in-service training for teachers in the area of personal and social education. Given an acceptance of the contribution of the scales to the field of personal education, teachers could be trained to appreciate the various uses of them in their school programmes. These uses have been described earlier (Chapter 7, Appendix III) together with the possible misuse of the scales. Again it should be emphasised that the scales should not be used in isolation but complement those other learning activities and experiences being planned for pupils in schools.

Since there are constraints on the funds available for in-service training another strong possibility is that of school-based training. The advantages of this approach lie in the increased representation from any one school, thereby improving communication and collaboration, and the more specific application of the scales to meet the school's particular needs. Neighbouring schools may also join this type of scheme, either those dealing with children of the same age or those from an alternative education sector. Though these health locus of control scales have been developed for a specific age group the inter-school liaison arising from school-based training can only help in the provision of adequate educational programmes.

The need for in-service training in one form or another is usually apparent with curriculum development since teachers need to understand the rationale and underlying basic principles of the innovation. Teachers also need an opportunity for experiences to be provided which enable them to explore their feelings regarding the various issues involved and, in fact, construct or come to terms with their own philosophy in the areas in question. This takes time and requires both a supportive and sensitive environment to be provided for processes which may appear threatening or stressful in one form or another. It is a process which has to be experienced by teachers if the project is to be taken "on board" and fully implemented. Shipman's (1973) proposal that "there can be no curriculum development without teacher development" would appear to be a truism both in commonsense terms and in the experience of many involved in curriculum innovation.

Headteachers play a crucial role in determining the chances of any curriculum development's successful uptake in schools. Their style is clearly vital since the organisational structure created within the school will be of great significance in the reaction of teachers to curriculum change. The degree to which a school is "open" is also very important (Halpin, 1966; Hoyle, 1969). The more open a school is the more likely it is to be able to absorb innovation. An "open" school will offer teachers a greater degree of freedom and autonomy and will encourage a higher level of collaboration between them. They are thus more likely to have the confidence that change requires and to have been involved themselves previously in the processes of change.

Headteachers' conferences or seminars within a local education authority would be one means of introducing the outline and purpose of a new project. Though agendas are often crowded the opportunity is presented for a case to be made for the inclusion of a curriculum item such as this research programme in health locus of control. It is clearly necessary therefore for a proactive approach to be taken to bring the project to the attention of key people such as local headteachers.

A headteacher commited to a particular development is also more likely to accept the notion of someone, probably a senior teacher, being delegated with responsibility for its effective implementation. Hopefully with these locus of control scales this procedure will be enacted so that a named person will be the focal point for all teachers wishing to make use of them. This will facilitate exchange of ideas and information besides assisting the development of a body of expertise within the school in this area of personal education. It will also enable a network of specialist practitioners to be created within a local authority who in turn can become a clearing house for research and development on health locus of control. This will permit a great deal of data to be gathered regarding the administration of the scales and the constructs involved. Adaptations may be possible followed, in time, by the introduction of new constructs within a properly designed development programme. There are exciting possibilities for an ongoing programme to be established with local teachers playing a significant role in the course of the research and development exercise.

Extremely important also is the need for continuing external support to be provided for teachers with this, as with any other, innovation.

Such support should be both of a practical and personal nature. Help should be given with any difficulties encountered in the administration, analysis or further use of the scales. Similarly any personal difficulties encountered by the practising teacher with the headteacher, fellow teachers or pupils also requires attention. An education adviser with special responsibility for personal and social education could be most helpful in such circumstances since there would be less opportunity for exchange of ideas and experiences. However it would still enable the scales to be used wisely and judiciously for the benefit of young people in the appropriate age category.

Finally it is extremely important that any curriculum innovation be fully publicised through publications which will bring its existence to the attention of its potential users. This could be professional journals related to specific teaching disciplines, general educational publications, published booklets or local newsletters and circulars. This would serve to raise teachers' awareness of, in this case, the scales so that anyone who so wishes could pursue a particular interest in the material. There is therefore a need to publicise the innovation both nationally and locally for maximum response and impact.

The dissemination exercise should be seen to comprise a number of phases all of which are necessary for the successful implementation of the development. Following the initial publicity about the scales will come a negotiation or persuasion phase which will involve convincing significant key personnel in the education field of their value. This will require a training strategy to be developed in order

to facilitate the implementation of the scales in the classroom. Extremely important however is the provision of a good "after-care" service to ensure that problems are overcome and that the innovation is put to the best possible use in terms of young people's personal development. This in turn will enable the programme to be properly evaluated with regard to its effect, its findings and its introduction into the curriculum. Any necessary refinements and developments can then be carried out to make the materials even more relevant and helpful to its recipients. This should be the major consideration at all times since it was for this reason that they were originally conceived.

8.4 IN CONCLUSION

The theme "Health Locus of Control" was selected as the focus of this research programme because of its central position in health and personal education. The notion of desired and perceived control over major events in one's life is not only attractive to a great many people but also associated, probably causally, with a wide variety of beliefs and behaviour. It is highly likely that people will move in and out of the three dimensions of "locus of control" (internal, powerful others and chance) according to the presenting circumstances and the personal felt needs of the individual. This is a desirable state of affairs since it is important to be able to discriminate between accepting responsibility, seeking help and respecting unexpected chance happenings.

At the same time however there is some evidence that people possess dispositions towards one or other of the three dimensions (6.5.5).

Some people are more likely to be dependent upon external forces than others who prefer to be in control of the situation, or at least accept that such personal control exists.

Teachers and other potential users (e.g. youth leaders) are actively discouraged from taking a strong "party" or personal line in advocating particular beliefs. Whilst they should help young people to consider the relative merits and disadvantages of various beliefs they should not exert undue pressure to coerce pupils into conforming with their own feelings on these issues. The construction of health locus of control profiles will, furthermore, enable young people to clarify where they stand in these areas though it should be left to them to determine whether change is desirable or necessary. Provided that an acceptance of responsibility for others affected by one's actions is acknowledged and that consideration is given to the feelings of others, this more open-ended approach is advocated. It is, in my experience, more effective to operate in this way since young people appreciate the respect given to their views and in a reciprocal manner appear more prepared to consider alternative ideas.

The research programme has progressed over a three year period from an informal discussion of a concept with a group of local schoolchildren to a computerised programme applying statistical tests of significance to over five hundred respondents. The original aim had been to develop a set of scales properly validated and with high levels of reliability. This, and more, has been achieved as described fully in Chapter 6, and briefly, earlier (8.1). Of importance is the methodology of the development programme (3.4.5) and the protocol established in administering the scales to pupils. The research has,

in fact, yielded a great harvest of data concerning young people's beliefs about personal control and dependency in applied social settings. It has shown how the pupils perceive risk taking behaviour, how they resolve conflicts of loyalty, how they cope with anxiety and how they conceptualise health. Value systems have been identified in conjunction with views on delayed reward or seeking immediate gratification. Many correlations have been undertaken in order to demonstrate the relationship between variables and seek consistencies, types or dispositions. The User's Guide has been based on the need to facilitate maximum use of the scales in future by those involved in the field of personal and social education.

It is essential to see that the programme has not ended! Rather it has been constructed, modified and set off on its journey. Already there is evidence to show that it is a valuable tool in the armoury of teachers and other educators. The scales however are dynamic and will continue to undergo a process of refinement and development during their future lifetime. Though it is no mean task to develop scales it is possible for further constructs to be identified and item pools produced as an extension of the work begun in this programme. This is quite possible if a small nucleus of enthusiasts work together on such a task. Better still if young people themselves are fully involved in proposing which constructs would be most salient features of the development exercise.

I firmly believe that the health locus of control scales will be of considerable help in the personal and social education of young people. In the same way that health may be perceived broadly in terms of growth so too can health locus of control be seen developmentally.

Part of maturity is acceptance of responsibility for one's actions and progress towards autonomy or self reliance. At the same time there must be a balance with fellow men through satisfying interpersonal relationships, avoiding involuntary rejection by others if possible. It is my great hope that the completion of this task will be one small step towards providing all young people with the help in growing up that they probably need and most certainly deserve.

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The Development of Health Locus of Control Scales and a User's Guide as a Contribution to the Personal Education of Thirteen and Fourteen Year Old Pupils in Secondary Schools

PART TWO

Submitted by Michael John Head

for the degree of Ph.D

of the University of Bath

1986

CHAPTER 5 - TABLES

TABLE 1

COMPARISON OF MEANS FOR INDIVIDUAL QUESTIONS

	QUESTION		GROUP A N = 23	GROUP B N = 24	GROUP C N = 23	GROUP D N = 21	MALE N = 38	FEMALE N = 53	TOTAL N = 91
1.	Fitness	CHANCE (C)	2.2	2.6	2.9	2.7	2.6	2.6	2.6
2.	Appearance	INTERNAL (I)	5.3	4.6	5.1	4.7	4.5	5.2	4.9
3.	Acceptance by friends	POWERFUL OTHERS (P)	3.8	4.3	3.4	3.7	4.1	3.6	3.8
4.	Agreeing with friends	C	4.6	5.0	4.3	5.6	5.3	4.7	4.8
5.	Sorting out worries	I	3.7	4.0	3.5	4.6	4.4	3.6	3.9
6.	Contentment	P	4.9	5.2	4.7	5.2	4.9	5.0	5.0
7.	Fitness	I	5.7	5.8	5.7	5.2	5.5	5.7	5.6
8.	Appearance	P	5.0	4.8	4.8	5.1	5.1	4.8	4.9
9.	Acceptance by friends	C	2.7	3.7	3.3	3.3	3.5	3.1	3.2
10.	Agreeing with friends	I	2.9	3.2	3.5	4.2	3.9	3.1	3.4
11.	Sorting out worries	P	2.4	3.1	2.3	2.9	2.9	2.5	2.7

TABLE 1

COMPARISON OF MEANS FOR INDIVIDUAL QUESTIONS

QUESTION		GROUP A N = 23	GROUP B N = 24	GROUP C N = 23	GROUP D N = 21	MALE N = 38	FEMALE N = 53	TOTAL N = 91
12. Contentment	C	2.8	3.6	2.3	3.2	2.9	3.1	3.0
13. Fitness	P	2.7	2.9	3.3	3.0	3.0	2.9	3.0
14. Appearance	C	4.2	4.5	4.0	4.5	4.6	4.1	4.3
15. Acceptance by friends	I	4.5	3.8	4.2	4.9	4.7	4.1	4.3
16. Agreeing with friends	P	3.2	3.6	3.4	3.5	3.8	3.2	3.4
17. Sorting out worries	C	3.8	4.8	4.6	4.4	4.5	4.4	4.4
18. Contentment	I	4.9	5.1	4.3	4.6	5.0	4.6	4.7
19. Specific fitness	C	2.9	3.4	3.1	3.4	3.4	3.1	3.2
20. " "	I	5.4	5.3	5.4	5.5	5.5	5.4	5.4
21. " "	P	2.3	2.9	2.4	2.7	3.1	2.2	2.6
22. Specific appearance	P	4.7	4.8	4.1	4.6	4.2	4.8	4.5

TABLE 1

COMPARISON OF MEANS FOR INDIVIDUAL QUESTIONS

QUESTION		GROUP A N = 23	GROUP B N = 24	GROUP C N = 23	GROUP D N = 21	MALE N = 38	FEMALE N = 53	TOTAL N = 91
23. Specific appearance	I	5.0	4.8	5.0	5.3	5.1	5.0	5.0
24. " "	C	2.3	2.1	2.9	2.6	2.5	2.5	2.5
25. Specific acceptance by friends	I	5.0	4.9	5.3	4.6	4.6	5.2	5.0
26. " " "	P	2.0	2.5	2.5	3.6	3.1	2.2	2.6
27. " " "	C	4.1	5.0	3.3	4.0	4.0	4.2	4.1
28. Specific agreeing with friends	I	5.6	4.1	5.7	4.5	4.9	5.0	5.0
29. " " "	P	3.4	3.4	3.8	3.8	3.8	3.4	3.6
30. " " "	C	3.9	4.7	3.3	4.9	4.5	3.9	4.2
31. Specific sorting out worries	P	4.7	4.5	3.8	4.5	4.6	4.2	4.4
32. " " "	C	4.2	4.3	4.1	4.9	4.3	4.4	4.4
33. " " "	I	5.6	5.6	5.4	5.3	5.1	5.7	5.5

TABLE 1

COMPARISON OF MEANS FOR INDIVIDUAL QUESTIONS

QUESTION		GROUP A N = 23	GROUP B N = 24	GROUP C N = 23	GROUP D N = 21	MALE N = 38	FEMALE N = 53	TOTAL N = 91
34. Specific contentment	C	3.9	3.5	3.8	4.0	4.0	3.8	3.9
35. " "	I	4.6	4.8	3.9	4.4	4.2	4.6	4.4
36. " "	P	4.7	4.6	4.6	4.6	4.7	4.5	4.6
37. Valuation of fitness		6.3	5.2	5.0	5.3	5.3	5.6	5.5
38. " " appearance		5.9	5.5	5.3	5.6	5.5	5.6	5.6
39. " " acceptance by friends		6.1	6.2	5.7	5.7	5.7	6.0	5.9
40. " " agreeing with friends		4.3	5.1	4.6	4.9	4.7	4.8	4.7
41. " " worries		6.0	5.8	6.2	5.4	5.9	5.8	5.8
42. " " contentment		6.5	6.5	6.3	6.1	6.3	6.5	6.4
43. " " specific fitness		4.4	4.3	3.5	4.0	4.1	4.0	4.0
44. " " specific appearance		6.3	5.9	6.0	6.1	6.0	6.2	6.1

TABLE 1

COMPARISON OF MEANS FOR INDIVIDUAL QUESTIONS

QUESTION	GROUP A N = 23	GROUP B N = 24	GROUP C N = 23	GROUP D N = 21	MALE N = 38	FEMALE N = 53	TOTAL N = 91
45. Valuation of specific acceptance by friends	1.9	2.6	1.9	3.8	2.9	2.2	2.5
46. " " " agreeing with friends	3.7	4.2	3.9	4.3	4.3	3.9	4.0
47. " " " sorting out worries	6.0	5.5	5.6	5.8	5.6	5.8	5.7
48. " " " contentment	5.8	5.7	6.0	5.4	5.5	5.9	5.7
49. Susceptibility	4.6	4.3	5.1	4.5	4.5	4.8	4.7
50. Good Health	6.6	6.4	5.9	6.3	6.1	6.5	6.3
51. Good Health	6.2	5.3	5.0	5.1	5.4	5.4	5.4
52. Susceptibility	6.2	5.8	5.8	6.0	5.7	6.2	6.0
53. Risk taking	4.5	4.0	4.8	5.2	5.2	4.2	4.6
54. Good Health	6.7	6.0	6.3	5.5	6.1	6.2	6.1
55. Newness	5.1	5.2	5.5	5.2	5.3	5.2	5.2

TABLE 1

COMPARISON OF MEANS FOR INDIVIDUAL QUESTIONS

QUESTION	GROUP A N = 23	GROUP B N = 24	GROUP C N = 23	GROUP D N = 21	MALE N = 38	FEMALE N = 53	TOTAL N = 91
56. Susceptibility	5.9	5.0	5.2	5.1	5.1	5.5	5.3
57. Good Health	6.0	5.3	5.9	4.7	5.1	5.7	5.5
58. Risk taking	4.0	3.5	4.4	4.6	4.4	3.9	4.1
59. Newness	5.1	5.1	5.6	5.6	5.0	5.6	5.3
60. Susceptibility	5.5	5.7	4.7	5.5	5.4	5.3	5.3
61. Being fit	6.0	5.9	5.9	6.0	5.8	6.0	6.0
62. Having good friends	3.7	5.4	5.4	5.3	4.8	5.0	5.0
63. Obeying rules	4.3	4.5	4.7	4.0	4.5	4.4	4.4
64. Feeling good	6.4	6.1	6.0	5.7	5.9	6.2	6.1
65. Not having illness or disease	5.8	6.0	6.1	6.0	6.0	6.0	6.0
66. Being admired	3.1	4.6	4.0	4.3	3.6	4.0	4.0

TABLE 1

COMPARISON OF MEANS FOR INDIVIDUAL QUESTIONS

QUESTION	GROUP A N = 23	GROUP B N = 24	GROUP C N = 23	GROUP D N = 21	MALE N = 38	FEMALE N = 53	TOTAL N = 91
67. Having a good time	4.2	5.9	6.3	5.2	5.6	5.2	5.4
68. Doing what you are told	2.9	4.2	4.2	3.6	3.8	3.7	3.7
69. Enjoying life	5.6	6.0	6.2	6.0	6.1	5.8	5.9
70. Being liked by people	4.1	5.3	5.6	4.7	4.9	5.0	4.9
71. Being good at things	4.4	5.2	5.2	5.5	5.2	5.0	5.1
72. Not having any worries	4.0	4.8	5.9	4.7	4.6	5.0	4.8
73. Being happy	5.1	6.0	6.4	5.9	5.7	6.0	5.8
74. Self discipline and control	5.5	4.8	5.7	5.5	5.5	5.3	5.4

TABLE 2

SCALE MEANS BY GROUP AND GENDER

	GROUP A N = 23			GROUP B N = 24			GROUP C N = 23			GROUP D N = 21			TOTAL MALE N=38	TOTAL FEMALE N=53	ALL N=91
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL			
Internality	62.1	55.8	58.0	54.6	57.1	56.1	58.0	56.2	57.1	55.6	59.2	57.9	57.5	57.1	57.2
Powerful Others	45.5	42.4	43.5	50.2	43.6	46.3	44.1	42.0	43.1	49.9	45.5	47.2	47.2	43.4	45.0
Chance	44.5	39.8	41.4	48.5	47.2	47.8	41.3	42.5	41.8	50.6	45.6	47.5	45.8	43.7	44.6
Risk taking	9.8	7.9	8.5	7.7	7.3	7.5	9.3	8.3	8.8	10.8	9.2	9.8	9.3	8.1	8.6
Susceptibility to ill health	22.5	22.1	22.3	21.0	20.9	20.9	20.9	20.8	20.9	18.0	23.0	21.1	20.7	21.7	21.3
Good health	25.5	25.5	25.5	23.3	23.0	23.1	23.3	22.8	23.0	18.5	23.5	21.6	22.7	23.8	23.4
Newness	8.5	10.9	10.1	10.5	10.1	10.3	11.0	11.2	11.1	10.6	10.9	10.8	10.3	10.8	10.6

TABLE 3

THE INTERNAL SCALE (MEANS) BY GROUP AND GENDER

	QUESTION	GROUP A N = 23	GROUP B N = 24	GROUP C N = 23	GROUP D N = 21	MALE N = 38	FEMALE N = 53	TOTAL N = 91
2.	Appearance	5.3	4.6	5.1	4.7	4.5	5.2	4.9
5.	Sorting out worries	3.7	4.0	3.5	4.6	4.4	3.6	3.9
7.	Fitness	5.7	5.8	5.7	5.2	5.5	5.7	5.6
10.	Agreeing with friends	2.9	3.2	3.5	4.2	3.9	3.1	3.4
15.	Acceptance by friends	4.5	3.8	4.2	4.9	4.7	4.1	4.3
18.	Contentment	4.9	5.1	4.3	4.6	5.0	4.6	4.7
20.	Specific fitness	5.4	5.3	5.4	5.5	5.5	5.4	5.4
23.	Specific appearance	5.0	4.8	5.0	5.3	5.1	5.0	5.0
25.	Specific acceptance by friends	5.0	4.9	5.3	4.6	4.6	5.2	5.0
28.	Specific agreeing with friends	5.6	4.1	5.7	4.5	4.9	5.0	5.0
33.	Specific worries	5.6	5.6	5.4	5.3	5.1	5.7	5.5
35.	Specific contentment	4.6	4.8	3.9	4.4	4.2	4.6	4.4

TABLE 4

THE INTERNAL SCALE (CORRELATIONS)

QUESTION	2	5	7	10	15	18	20	23	25	28	33	35
2	1.0											
5	-.049	1.0										
7	.184	.255*	1.0									
10	.121	.097	.055	1.0								
15	.243*	.095	-.055	.281**	1.0							
18	-.152	.334**	.242*	.117	-.050	1.0						
20	.231*	.269**	.229*	.012	.215*	.006	1.0					
23	.317**	.048	.279**	.155	.112	.015	.179	1.0				
25	.032	.021	.361**	-.251**	-.167	-.033	.099	.132	1.0			
28	.183	.076	.011	-.128	.219*	-.106	.073	-.138	.200	1.0		
33	.078	.156	.128	-.048	-.049	.091	.203	.116	.260*	.132	1.0	
35	.059	-.044	.145	.116	-.109	.110	-.094	.141	.122	-.162	.144	1.0

N = 91

* P < .05

** P < .01

Alpha = .524

TABLE 5

ITEM ANALYSIS - "INTERNAL" SCALE

QUESTION (ITEM)	CORRELATION ITEM - FULL SCALE	ALPHA IF ITEM DELETED
2	.257	.493
5	.278	.481
7	.436	.445
10	.094	.533
15	.149	.516
18	.150	.517
20	.312	.479
23	.293	.482
25	.158	.519
28	.073	.538
33	.280	.487
35	.090	.531

Alpha Reliability of Scale = .524

TABLE 6

POWERFUL OTHERS (MEANS) BY GROUP AND GENDER

QUESTION	GROUP A N = 23	GROUP B N = 24	GROUP C N = 23	GROUP D N = 21	MALE N = 38	FEMALE N =53	TOTAL N = 91
3. Acceptance by friends	3.8	4.3	3.4	3.7	4.1	3.6	3.8
6. Contentment	4.9	5.2	4.7	5.2	4.9	5.0	5.0
8. Appearance	5.0	4.8	4.8	5.1	5.1	4.8	4.9
11. Sorting out worries	2.4	3.1	2.3	2.9	2.9	2.5	2.7
13. Fitness	2.7	2.9	3.3	3.0	3.0	2.9	3.0
16. Agreeing with friends	3.2	3.6	3.4	3.5	3.8	3.2	3.4
21. Specific fitness	2.3	2.9	2.4	2.7	3.1	2.2	2.6
22. Specific appearance	4.7	4.8	4.1	4.6	4.2	4.8	4.5
26. Specific acceptance by friends	2.0	2.5	2.5	3.6	3.1	2.2	2.6
29. Specific agreeing with friends	3.4	3.4	3.8	3.8	3.8	3.4	3.6
31. Specific worries	4.7	4.5	3.8	4.5	4.6	4.2	4.4
36. Specific contentment	4.7	4.6	4.6	4.6	4.7	4.5	4.6

TABLE 7

POWERFUL OTHERS (CORRELATIONS)

Question	3	6	8	11	13	16	21	22	26	29	31	36
3	1.0											
6	.177	1.0										
8	.028	.037	1.0									
11	.228*	.139	.104	1.0								
13	.133	.299**	-.025	.300**	1.0							
16	.192	.147	.115	.224*	.216*	1.0						
21	.034	.092	-.133	.244*	.358**	.204	1.0					
22	.216*	.234*	.000	.076	.116	.068	.120	1.0				
26	-.019	.139	-.168	.128	-.063	.040	.125	.108	1.0			
29	.032	.166	-.081	.215*	.246*	.043	.237*	.192	.274**	1.0		
31	.137	.215*	.073	.214*	.344**	.157	.377**	.305**	.048	.330**	1.0	
36	.098	.037	.105	.115	.221*	-.002	.125	.120	-.156	.133	.162	1.0

N = 91

* P < .05

** P < .01

Alpha = .653

TABLE 8

ITEM ANALYSIS - "POWERFUL OTHERS" SCALE

QUESTION (ITEM)	CORRELATION ITEM - TOTAL SCALE	ALPHA IF ITEM DELETED
3	.246	.642
6	.342	.625
8	.008	.672
11	.403	.613
13	.433	.606
16	.276	.636
21	.369	.620
22	.313	.629
26	.093	.669
29	.365	.620
31	.483	.596
36	.183	.650

Alpha Reliability of Scale = .653

TABLE 9

CHANCE (MEANS) BY GROUP AND GENDER

QUESTION	GROUP A N = 23	GROUP B N = 24	GROUP C N = 23	GROUP D N = 21	MALE N = 38	FEMALE N = 53	TOTAL N = 91
1. Fitness	2.2	2.6	2.9	2.7	2.6	2.6	2.6
4. Agreeing with friends	4.6	5.0	4.3	5.6	5.3	4.7	4.9
9. Acceptance by friends	2.7	3.7	3.3	3.3	3.5	3.1	3.2
12. Contentment	2.8	3.6	2.3	3.2	2.9	3.1	3.0
14. Appearance	4.2	4.5	4.0	4.5	4.6	4.1	4.3
17. Sorting out worries	3.8	4.8	4.6	4.4	4.5	4.4	4.4
19. Specific fitness	2.9	3.4	3.1	3.4	3.4	3.1	3.2
24. Specific appearance	2.3	2.1	2.9	2.6	2.5	2.5	2.5
27. Specific acceptance by friends	4.1	5.0	3.3	4.0	4.0	4.2	4.1
30. Specific agreeing with friends	3.9	4.7	3.3	4.9	4.5	3.9	4.2
32. Specific worries	4.2	4.3	4.1	4.9	4.3	4.4	4.4
34. Specific contentment	3.9	3.5	3.8	4.0	4.0	3.8	3.9

TABLE 10

CHANCE (CORRELATIONS)

QUESTION	1	4	9	12	14	17	19	24	27	30	32	34
1	1.0											
4	.130	1.0										
9	.324**	.087	1.0									
12	.325**	.112	.242*	1.0								
14	-.070	-.168	.025	.076	1.0							
17	.186	-.114	.331**	.247*	.217*	1.0						
19	.133	-.025	.050	.135	.143	.230*	1.0					
24	.124	-.270**	.137	.061	.204	.235*	.091	1.0				
27	-.002	.155	.090	.044	.021	.099	.085	.007	1.0			
30	.071	.192	.267*	.211*	.092	.153	.242*	-.067	.233*	1.0		
32	.215*	.240*	-.002	.118	-.012	.067	.157	-.019	.169	.146	1.0	
34	.273**	.058	.302**	.218*	-.076	.259*	.101	.118	.045	.056	.197	1.0

N = 91

* P < .05
** P < .01

Alpha = .601

TABLE 11

ITEM ANALYSIS - "CHANCE" SCALE

QUESTION (ITEM)	CORRELATION ITEM - TOTAL SCALE	ALPHA IF ITEM DELETED
1	.343	.565
4	.071	.622
9	.384	.553
12	.367	.559
14	.092	.614
17	.393	.549
19	.275	.576
24	.115	.608
27	.199	.594
30	.340	.562
32	.261	.579
34	.311	.570

Alpha Reliability of Scale = .601

TABLE 12

CORRELATION OF GENERAL TO SPECIFIC CONSTRUCTS

CONSTRUCT	SCALES		
	INTERNAL	CHANCE	POWERFUL OTHERS
Fitness	.229 *	.133	.358**
Appearance	.317 **	.204	.000
Acceptance by friends	-.167	.090	-.059
Agreeing with friends	-.128	.192	.043
Sorting out worries	.156	.067	.214 *
Contentment	.110	.218	.037
TOTAL (All 6 Constructs)	.263*	.419**	.368**

* $P < .05$

** $P < .01$

TABLE 13

CORRELATIONS BETWEEN INTERNALITY, POWERFUL OTHERS AND CHANCE SCALES WITHIN CONSTRUCTS.

CONSTRUCT		Internality - Powerful Others	Internality - Chance	Chance - Powerful Others
FITNESS	(general	.003	-.060	.239 *
	(specific	-.306 **	-.229 *	.311 **
APPEARANCE	(general	.096	-.107	-.047
	(specific	-.404 **	.142	-.025
ACCEPTANCE BY FRIENDS	(general	-.034	-.009	.408 **
	(specific	-.648 **	-.007	.092
AGREEING WITH FRIENDS	(general	.303 **	.269 **	.156
	(specific	-.238 *	-.274 **	.258 *
SORTING OUT WORRIES	(general	-.152	.283	.048
	(specific	-.244 *	.013	.179
CONTENTMENT	(general	.087	.102	.060
	(specific	.023	-.062	.089

* P $<$ .05
** P $<$ .01

TABLE 14

RISK TAKING (CORRELATIONS)

Question	53	58	
53	1.0		N = 91
58	.575**	1.0	

TABLE 15

SUSCEPTIBILITY (CORRELATIONS)

Question	49	52	56	60	
49	1.0				
52	.143	1.0			
56	.070	.261*	1.0		N = 91
60	.134	.007	-.025	1.0	

* $P < .05$
** $P < .01$

TABLE 16

NEWNESS (CORRELATIONS)

Question	55	59	
55	1.0		N = 91
59	.164	1.0	

TABLE 17

GOOD HEALTH (CORRELATIONS)

Question	50	51	54	57	
50	1.0				
51	.134	1.0			
54	.163	.323**	1.0		N = 91
57	.102	.115	.357**	1.0	

** P < .01

TABLE 18

FITNESS (CORRELATIONS)

GENERAL

Question	1 (C)	7 (I)	13 (P)	37	
1(C)	1.0				
7(I)	-.060	1.0			
13(P)	.239*	.003	1.0		N = 91
37	-.158	.082	-.011	1.0	

TABLE 19

SPECIFIC

Question	19 (C)	20 (I)	21 (P)	43	
19(C)	1.0				
20(I)	-.229*	1.0			
21(P)	.311**	-.306**	1.0		N = 91
43	-.329**	.378**	-.164	1.0	

* $P < .05$

** $P < .01$

TABLE 20

APPEARANCE (CORRELATIONS)

GENERAL

Question	2 (I)	8 (P)	14 (C)	38	
2(I)	1.0				
8(P)	.096	1.0			N = 91
14(C)	-.107	-.047	1.0		
38	.189	.091	.155	1.0	

TABLE 21

SPECIFIC

Question	22 (P)	23 (I)	24 (C)	44	
22(P)	1.0				
23(I)	-.404**	1.0			N = 91
24(C)	-.025	.142	1.0		
44	.188	.072	-.188	1.0	

** P < .01

TABLE 22

ACCEPTANCE BY FRIENDS (CORRELATIONS)

GENERAL

Question	3 (P)	9 (C)	15 (I)	39	
3(P)	1.0				
9(C)	.408**	1.0			N = 91
15(I)	-.034	-.009	1.0		
39	.098	.099	-.057	1.0	

TABLE 23

SPECIFIC

Question	25 (I)	26 (P)	27 (C)	45	
25(I)	1.0				
26(P)	-.648**	1.0			
27(C)	-.007	.092	1.0		N = 91
45	-.511**	.668**	.088	1.0	

** P < .01

TABLE 24

AGREEING WITH FRIENDS (CORRELATIONS)

GENERAL

Question	4 (C)	10 (I)	16 (P)	40	
4(C)	1.0				
10(I)	.269**	1.0			N = 91
16(P)	.156	.303**	1.0		
40	-.010	.103	.232*	1.0	

TABLE 25

SPECIFIC

Question	28 (I)	29 (P)	30 (C)	46	
28(I)	1.0				
29(P)	-.238*	1.0			
30(C)	-.274**	.258*	1.0		N = 91
46	-.127	.596**	.227*	1.0	

* P < .05

** P < .01

TABLE 26

SORTING OUT WORRIES (CORRELATIONS)

General

Question	5 (I)	11 (P)	17 (C)	41	
5(I)	1.0				
11(P)	-.152	1.0			N = 91
17(C)	.283**	.048	1.0		
41	-.116	-.108	-.114	1.0	

TABLE 27

Specific

Question	31 (P)	32 (C)	33 (I)	47	
31 (P)	1.0				
32 (C)	.179	1.0			
33 (I)	-.244*	.013	1.0		N = 91
47	.060	-.056	.395**	1.0	

* $P < .05$
** $P < .05$

TABLE 28

CONTENTMENT (CORRELATIONS)

General

Question	6 (P)	12 (C)	18 (I)	42	
6 (P)	1.0				
12 (C)	.060	1.0			N = 91
18 (I)	.087	.102	1.0		
42	.053	-.068	-.071	1.0	

TABLE 29

Specific

Question	34 (C)	35 (I)	36 (P)	48	
34 (C)	1.0				
35 (I)	-.062	1.0			N = 91
36 (P)	.089	.023	1.0		
48	.016	-.015	-.001	1.0	

TABLE 30

VALUATION OF CONSTRUCTS (CORRELATIONS)

CONSTRUCT		CORRELATION WITH VALUATION			
		INTERNALITY	CHANCE	POWERFUL OTHERS	ITEM MEANS
FITNESS	(General	.082	-.158	-.011	5.5
	(Specific	.378**	-.329**	-.164	4.0
APPEARANCE	(General	.189	.155	.091	5.6
	(Specific	.072	-.188	.188	6.1
ACCEPTANCE	(General	-.057	.099	.098	5.9
	(Specific	-.511**	.088	.668**	2.5
AGREEING	(General	.103	-.010	.232*	4.7
	(Specific	-.127	.227*	.596**	4.0
WORRIES	(General	-.116	-.114	-.108	5.8
	(Specific	.395**	-.056	.060	5.7
CONTENT-MENT	(General	-.071	-.068	.053	6.4
	(Specific	-.015	.016	-.001	5.7

* $P < .05$
** $P < .01$

TABLE 31

CONCEPTUALISATION OF HEALTH (CORRELATIONS)

Question	61	62	63	64	65	66	67	68	69	70	71	72	73	74
61	1.0													
62	.138	1.0												
63	.077	.480**	1.0											
64	.475**	.122	.137	1.0										
65	.306**	.098	.142	.256*	1.0									
66	.083	.478**	.183	.037	.143	1.0								
67	.229*	.503**	.376**	.298**	.275**	.373**	1.0							
68	-.090	.538**	.609**	.008	.098	.398**	.423**	1.0						
69	.320**	.378**	.346**	.370**	.245*	.400**	.533**	.394**	1.0					
70	.058	.622**	.399**	.189	-.026	.501**	.542**	.526**	.461**	1.0				
71	.126	.406**	.286**	-.051	.012	.382**	.292**	.424**	.321**	.544**	1.0			
72	.147	.419**	.339**	.189	.124	.336**	.422**	.435**	.333**	.524**	.338**	1.0		
73	.161	.570**	.251*	.161	.151	.373**	.402**	.390**	.349**	.639**	.398**	.642**	1.0	
74	.150	.350**	.258*	.190	.098	.004	.155	.310**	.266*	.157	.125	.288**	.139	1.0

N = 91

* P < .05
** P < .01

TABLE 32

HEALTH CONCEPTS AND LOCUS OF CONTROL

DIMENSIONS OF HEALTH CONCEPTS	CORRELATION WITH		
	INTERNAL SCALE	CHANCE SCALE	POWERFUL OTHERS SCALE
Medical	.378**	-.061	.049
Prescriptive	.368**	-.025	.155
Social	.093	.223*	.313**
Achievement	.115	.119	.172
Positive mental	.251*	.056	.109
Negative mental	.188	-.078	.110

* $P < .05$

** $P < .01$

TABLE R1

THE "INTERNAL" SCALE

QUESTION	GROUP A N = 24	GROUP B N = 21	GROUP C N = 20	GROUP D N = 23	MALE N = 41	FEMALE N = 47	TOTAL N = 88
2. Appearance	4.7	4.1	4.5	5.1	4.5	4.7	4.6
5. Worries	3.3	3.9	3.7	3.4	3.9	3.3	3.5
7. Fitness	5.7	5.4	5.3	5.8	5.5	5.6	5.6
10. Agreeing	5.8	5.7	6.2	5.7	5.8	5.8	5.8
15. Acceptance	5.0	4.9	4.4	4.5	4.8	4.6	4.7
18. Contentment	4.6	4.9	4.7	4.7	4.7	4.7	4.7
20. Fitness test	5.3	5.0	5.1	5.5	5.5	5.0	5.2
23. Interview	5.1	5.0	5.3	4.7	4.8	5.2	5.0
25. Smoking	6.0	5.1	5.4	5.7	5.3	5.8	5.6
28. Discussion	5.8	5.1	5.5	5.6	5.4	5.6	5.5
33. Homework	4.5	4.2	4.2	4.2	4.3	4.3	4.3
35. School	4.5	4.9	4.1	5.2	4.5	4.8	4.7
FULL SCALE	60.1	58.0	58.2	60.0	58.9	59.4	59.2

TABLE R2

THE "POWERFUL OTHERS" SCALE

QUESTION	GROUP A N = 24	GROUP B N = 21	GROUP C N = 20	GROUP D N = 23	MALE N = 41	FEMALE N = 47	TOTAL N = 88
3. Acceptance	2.8	2.4	3.3	2.6	3.0	2.6	2.8
6. Contentment	3.7	3.7	3.6	4.2	3.7	3.9	3.8
8. Appearance	2.8	2.7	2.4	3.0	2.7	2.8	2.7
11. Worries	2.6	3.1	2.6	3.2	2.8	2.9	2.8
13. Fitness	2.9	3.2	3.1	2.9	3.0	3.1	3.0
16. Agreeing	4.0	3.0	4.7	3.6	4.0	3.7	3.8
21. Fitness test	3.0	2.5	2.7	2.7	3.0	2.5	2.7
22. Interview	4.6	3.6	4.0	5.0	4.8	3.9	4.3
26. Smoking	1.8	2.8	2.1	1.9	2.2	2.0	2.1
29. Discussion	3.1	3.0	3.5	2.7	3.2	2.9	3.1
31. Homework	4.3	4.6	4.4	4.7	4.4	4.6	4.5
36. School	4.7	4.3	3.8	4.4	4.3	4.4	4.3
Full Scale	40.4	39.0	39.9	40.7	41.0	39.3	40.1

TABLE R3

THE "CHANCE" SCALE

QUESTION	GROUP A N = 24	GROUP B N = 21	GROUP C N = 20	GROUP D N = 23	MALE N = 41	FEMALE N = 47	TOTAL N = 88
1. Fitness	2.6	2.6	3.3	2.7	3.0	2.6	2.8
4. Agreeing	3.0	3.2	3.5	3.5	3.2	3.3	3.3
9. Acceptance	2.5	3.1	2.6	2.7	2.9	2.6	2.7
12. Contentment	2.3	2.3	2.5	2.8	2.7	2.3	2.5
14. Appearance	4.5	3.8	4.3	4.1	4.5	3.9	4.2
17. Worries	3.3	4.1	3.8	4.4	4.1	3.7	3.9
19. Fitness test	2.7	3.2	3.7	2.6	2.7	3.3	3.0
24. Interview	3.5	4.5	5.8	4.4	4.5	4.5	4.5
27. Smoking	4.8	4.4	4.5	4.6	4.5	4.7	4.6
30. Discussion	4.2	3.8	3.9	3.8	4.0	3.8	3.9
32. Homework	4.0	3.8	4.4	3.9	3.9	4.0	4.0
34. School	3.7	3.9	4.5	3.7	4.1	3.7	3.9
Full Scale	41.1	42.7	46.4	43.2	44.0	42.5	43.2

TABLE R4

CORRELATION OF GENERAL TO SPECIFIC CONSTRUCTS

CONSTRUCT	SCALES		
	INTERNAL	CHANCE	POWERFUL OTHERS
Fitness	.114	.239	.245
Appearance	.103	.128	.265
Acceptance by friends	-.062	-.245	-.097
Agreeing with friends	.363	.129	.208
Sorting out worries	.233	.248	.213
Contentment	.493	.375	.211

TABLE R5

CORRELATIONS BETWEEN INTERNALITY, POWERFUL OTHERS AND CHANCE SCALES WITHIN CONSTRUCTS.

CONSTRUCT		Internality - Powerful Others	Internality - Chance	Chance - Powerful Others
FITNESS	(general	-.022	-.305	.334
	(specific	-.024	-.407	-.081
APPEARANCE	(general	.010	-.004	-.290
	(specific	-.435	.018	.032
ACCEPTANCE BY FRIENDS	(general	-.229	-.075	.260
	(specific	-.457	.276	-.181
AGREEING WITH FRIENDS	(general	-.082	.030	.179
	(specific	-.534	-.189	.212
SORTING OUT WORRIES	(general	-.054	.109	-.011
	(specific	-.395	-.085	.165
CONTENTMENT	(general	-.074	.083	.105
	(specific	-.142	-.082	-.070

TABLE P6

QUESTION (ITEM)		CORRELATION ITEM : TOTAL SCALE	QUESTION (ITEM)		CORRELATION ITEM : TOTAL SCALE
1	C	.49	19	C	.21
2	I	.23	20	I	.08
3	P	.22	21	P	.38
4	C	.39	22	P	.15
5	I	.12	23	I	.18
6	P	.27	24	C	.42
7	I	.24	25	I	.03
8	P	.36	26	P	-.16
9	C	.37	27	C	-.14
10	I	.09	28	I	.27
11	P	.22	29	P	.25
12	C	.40	30	C	.35
13	P	.37	31	P	.23
14	C	-.01	32	C	.53
15	I	.18	33	I	.23
16	P	.16	34	C	.44
17	C	.24	35	I	.37
18	I	.36	36	P	.12

I = Internal scale item
P = Powerful Others scale item
C = Chance scale item

Alpha reliabilities of scales

Internal	-	.50
Powerful Others	-	.52
Chance	-	.64

CHAPTER 6 - TABLES

TABLE 1

The INTERNAL Scale - Item and Scale Means By Group and Gender

GROUP / QUESTION	A N=26	B N=25	C N=17	D N=20	E N=18	F N=17	G N=19	H N=16	I N=28	J N=28	K N=20	L N=25	M N=21	N N=19	O N=11	MALE N=153	FEMALE N=157	TOTAL N=310
2	5.0	5.0	5.7	5.8	5.4	5.1	6.3	5.7	5.4	5.0	5.1	5.2	5.5	5.2	4.4	5.3	5.3	5.3
5	5.6	4.5	5.2	5.4	5.1	4.8	5.2	5.2	5.3	5.0	4.8	5.4	5.8	5.0	5.6	5.3	5.1	5.2
7	6.1	5.8	5.9	6.0	6.2	6.5	6.1	6.2	5.9	5.6	5.5	6.2	5.7	6.0	5.4	5.9	5.9	5.9
10	5.9	5.9	5.5	5.0	5.7	5.6	5.7	6.2	5.5	5.3	5.2	5.6	5.6	5.8	5.8	5.6	5.6	5.6
15	4.1	4.4	4.7	4.6	5.0	5.0	5.8	5.1	5.2	4.7	5.3	4.9	5.1	4.8	4.9	4.9	4.8	4.9
18	4.7	4.8	4.5	4.9	5.0	4.5	5.0	4.7	4.6	4.8	4.7	5.0	5.3	4.4	5.2	4.9	4.6	4.8
20	5.7	5.8	5.4	5.6	5.4	6.2	6.0	5.9	5.7	5.4	4.7	5.2	5.3	5.7	6.0	5.6	5.6	5.6
23	4.8	5.4	5.3	4.7	4.8	4.5	5.4	4.3	4.6	4.6	4.3	4.8	5.3	4.7	5.5	4.8	4.9	4.8
25	6.0	5.5	5.5	5,3	5.4	6.1	6.1	6.4	5.6	5.3	5.4	6.0	5.9	6.1	6.0	5.6	5.9	5.7
28	6.6	6.1	6.0	5.4	5.9	5.2	6.1	6.2	5.0	5.0	4.7	5.8	5.0	5.8	6.4	5.7	5.6	5.6
33	4.6	5.1	4.1	4.1	5.3	4.2	5.0	4.6	4.4	4.9	5.0	5.6	4.4	4.5	4.8	4.7	4.8	4.7
35	4.6	4.8	4.7	4.7	4.9	4.8	5.1	5.3	5.1	4.7	4.5	4.9	4.9	4.4	4.9	4.8	4.9	4.8
SCALE MEAN	63.8	63.0	62.6	61.7	64.2	62.4	67.8	65.8	62.2	60.5	59.4	64.6	63.9	62.6	65.0	63.3	63.0	63.2

TABLE 2

The INTERNAL Scale - Correlations Between Items

QUESTION (ITEM)	2	5	7	10	15	18	20	23	25	28	33	35
2	1.0											
5	.02	1.0										
7	.17*	.05	1.0									
10	.13	-.03	.19**	1.0								
15	.25**	-.06	.13	.11	1.0							
18	.03	.17*	-.05	.01	.17*	1.0						
20	.05	.09	.32**	.19**	.10	.00	1.0					
23	-.07	.10	-.03	-.04	-.11	.05	.08	1.0				
25	.11	.11	.02	.13	.16*	.12	.11	.12	1.0			
28	.07	-.01	.17*	.36**	.09	.05	.14	.12	.12	1.0		
33	-.01	.08	.08	.04	.07	.23**	.14	.16*	.09	.16*	1.0	
35	.04	.07	.05	.01	.14	.40**	.09	.19**	.20**	.11	.36**	1.0

N = 310

* $P < .01$

** $P < .001$

Alpha = .57

TABLE 3

The INTERNALScale - Item Analysis

QUESTION (ITEM)	CORRELATION ITEM:FULL SCALE	ALPHA IF ITEM DELETED
2	.16	.56
5	.12	.57
7	.23	.55
10	.22	.55
15	.20	.55
18	.26	.54
20	.28	.54
23	.12	.57
25	.28	.54
28	.30	.53
33	.31	.53
35	.37	.52

Alpha Reliability of Scale = .57

TABLE 4

THE POWERFUL OTHERS Scale - Item and Scale Means by Group and Gender

GROUP / QUESTION	A N=26	B N=25	C N=17	D N=20	E N=18	F N=17	G N=19	H N=16	I N=28	J N=28	K N=20	L N=25	M N=21	N N=19	O N=11	MALE N=153	FEMALE N=157	TOTAL N=310
3	4.8	4.6	4.8	5.1	5.7	4.7	3.9	4.2	4.6	4.7	5.1	4.8	4.9	4.2	4.8	4.8	4.7	4.7
6	4.5	3.3	3.6	4.4	5.5	4.1	4.5	4.7	4.5	4.4	4.6	4.8	4.2	4.6	4.5	4.4	4.4	4.4
8	2.3	2.2	2.5	2.6	2.6	3.1	1.8	2.3	2.5	2.5	2.7	2.3	2.4	2.7	3.0	2.4	2.5	2.5
11	4.1	4.7	4.6	3.8	4.4	5.1	3.8	4.2	4.2	4.4	4.7	4.5	4.8	4.9	3.9	4.2	4.6	4.4
13	3.1	3.1	2.8	3.1	2.6	2.6	2.6	2.7	3.0	2.4	3.3	3.0	3.1	3.2	2.4	3.0	2.7	2.9
16	4.6	4.7	5.3	4.8	5.2	5.5	5.5	5.2	5.0	4.6	4.8	4.5	5.4	4.7	5.0	4.8	5.1	4.9
21	2.7	3.0	2.3	2.1	3.2	1.6	2.0	2.1	3.1	2.5	3.5	3.0	2.8	2.6	3.2	2.7	2.6	2.7
22	4.9	4.1	4.2	4.6	4.6	4.8	4.0	4.8	4.8	4.1	5.1	4.4	3.9	4.9	3.4	4.5	4.4	4.5
26	3.2	3.9	3.7	3.9	4.2	4.2	4.5	4.1	4.0	4.1	4.4	4.0	3.9	4.2	4.6	4.3	3.7	4.0
29	5.3	4.7	5.1	4.1	4.9	4.8	4.9	4.7	4.8	5.0	4.3	4.2	4.7	5.3	4.9	4.5	5.1	4.8
31	5.4	5.6	5.8	5.4	5.7	5.6	5.8	5.0	5.5	5.0	4.7	5.1	5.4	5.9	5.7	5.3	5.5	5.4
36	4.8	4.4	4.4	4.7	4.7	4.3	4.8	4.2	5.0	4.3	4.9	5.1	4.8	4.4	4.8	4.6	4.7	4.7
SCALE MEAN	49.8	48.4	49.0	49.0	53.1	50.4	48.3	48.2	51.1	48.1	52.4	49.7	50.2	51.7	50.3	49.6	50.2	49.9

TABLE 5

The POWERFUL OTHERS Scale - Correlations Between Items

QUESTION (ITEM)	3	6	8	11	13	16	21	22	26	29	31	36
3	1.0											
6	.07	1.0										
8	.10	.06	1.0									
11	.03	.09	.10	1.0								
13	.06	.03	.15*	-.01	1.0							
16	.08	.07	-.06	.00	.01	1.0						
21	.11	.06	.14	.01	.29**	.01	1.0					
22	-.05	-.02	.13	.07	.10	.02	.13	1.0				
26	.08	.12	.21**	.14	.18*	-.08	.08	.24**	1.0			
29	.04	.06	.01	-.01	-.01	.41**	.08	.07	-.05	1.0		
31	-.01	.05	.15*	.13	.07	.06	.12	.20**	.15*	.09	1.0	
36	.06	.28**	.04	-.01	.13	.10	.14	.14	.03	.11	.09	1.0

N = 310

* P < .01

** P < .001

Alpha = .51

TABLE 6

The POWERFUL OTHERS Scale - Item Analysis

QUESTION (ITEM)	CORRELATION ITEM:FULL SCALE	ALPHA IF ITEM DELETED
3	.12	.51
6	.19	.49
8	.23	.49
11	.12	.51
13	.22	.49
16	.14	.51
21	.26	.48
22	.22	.49
26	.24	.48
29	.18	.50
31	.25	.48
36	.25	.48

Alpha Reliability of Scale = .51

TABLE 7

THE CHANCE Scale - Item and Scale Means by Group and Gender

GROUP / QUESTION	A N=26	B N=25	C N=17	D N=20	E N=18	F N=17	G N=19	H N=16	I N=28	J N=28	K N=20	L N=25	M N=21	N N=19	O N=11	MALE N=153	FEMALE N=157	TOTAL N=310
1	2.8	2.5	1.8	2.7	3.2	1.9	1.6	2.1	2.7	2.0	2.7	2.6	3.2	2.8	2.3	2.5	2.5	2.5
4	2.6	2.7	3.7	3.3	3.1	3.1	2.9	3.6	2.9	3.1	3.5	3.9	3.2	2.9	3.1	3.3	3.0	3.2
9	2.8	2.4	3.2	3.4	3.3	3.8	2.9	2.7	3.0	2.3	3.4	3.8	3.3	3.3	3.2	3.2	3.0	3.1
12	2.6	1.6	2.0	2.4	2.8	2.5	1.7	2.1	2.5	2.9	2.6	3.2	2.7	2.6	2.9	2.4	2.6	2.5
14	4.0	3.7	3.9	3.7	4.2	3.9	4.2	4.0	4.2	3.3	4.1	4.2	4.4	3.7	3.4	4.3	3.6	3.9
17	3.3	3.0	3.7	3.9	3.8	3.3	3.9	2.6	3.8	3.4	4.9	4.4	3.9	4.0	3.8	3.6	3.8	3.7
19	4.2	4.5	3.8	4.5	4.6	3.5	4.0	3.1	4.3	4.2	4.8	4.8	5.1	4.6	5.4	4.2	4.5	4.4
24	3.9	4.4	4.9	3.7	5.0	3.9	4.0	3.2	4.9	4.2	5.2	5.2	4.8	4.5	4.8	4.1	4.8	4.4
27	2.4	2.4	2.8	2.2	3.1	2.6	2.5	2.2	2.5	3.1	3.1	3.4	3.1	3.4	3.3	2.8	2.8	2.8
30	3.5	4.0	3.8	3.7	4.4	3.0	3.5	2.9	4.2	3.9	4.4	4.0	4.4	4.5	3.8	3.9	3.9	3.9
32	3.8	3.8	3.7	4.2	3.8	3.6	2.9	3.3	3.6	3.6	4.3	4.4	4.5	3.6	4.6	3.7	4.0	3.9
34	3.9	3.9	3.6	4.0	4.3	3.8	3.6	3.4	3.3	3.4	4.3	4.4	4.1	3.1	4.2	3.9	3.7	3.8
SCALE MEAN	39.8	39.0	40.9	42.0	45.6	38.9	37.8	35.1	42.0	39.5	47.6	48.2	46.9	43.1	44.8	41.9	42.2	42.1

TABLE 8

The CHANCE Scale - Correlations Between Items

QUESTION (ITEM)	1	4	9	12	14	17	19	24	27	30	32	34
1	1.0											
4	.24**	1.0										
9	.35**	.23**	1.0									
12	.24**	.17*	.18*	1.0								
14	.16*	.23**	.26**	.09	1.0							
17	.26**	.16*	.21**	.20**	.17*	1.0						
19	.23**	.08	.16*	.21**	.14	.35**	1.0					
24	.13	.04	.16*	.10	.01	.23**	.43**	1.0				
27	.16*	.13	.19**	.14	.01	.11	.20**	.11	1.0			
30	.26**	.24**	.12	.23**	.19**	.20**	.28**	.30**	.26**	1.0		
32	.26**	.19**	.19**	.20**	.13	.23**	.38**	.35**	.24**	.32**	1.0	
34	.22**	.21**	.26**	.21**	.20**	.23**	.29**	.15*	.27**	.23**	.33**	1.0

* $P < .01$

** $P < .001$

Alpha = .76

TABLE 9

The CHANCE Scale - Item Analysis

QUESTION (ITEM)	CORRELATION ITEM:FULL SCALE	ALPHA IF ITEM DELETED
1	.43	.74
4	.32	.75
9	.39	.74
12	.34	.75
14	.27	.75
17	.41	.74
19	.49	.73
24	.35	.75
27	.31	.75
30	.46	.73
32	.50	.73
34	.45	.73

Alpha Reliability of Scale = .76

TABLE 10

Correlation of Items to INTERNAL, POWERFUL OTHERS and CHANCE Scales

QUESTION (ITEM)	CORRELATION WITH		
	INTERNAL SCALE	POWERFUL OTHERS SCALE	CHANCE SCALE
1 C	-.04	.19	.43#
2 I	.16#	-.06	-.10
3 P	-.04	.12#	.11
4 C	-.09	.13	.32#
5 I	.12#	-.06	.11
6 P	.00	.19#	.20
7 I	.23#	-.11	-.18
8 P	-.16	.23#	.25
9 C	.03	.16	.39#
10 I	.22#	.04	-.02
11 P	-.07	.12#	.17
12 C	-.13	.13	.34#
13 P	-.05	.22#	.26
14 C	.11	.27	.27#
15 I	.20#	.11	.00
16 P	.07	.14#	-.03
17 C	.03	.19	.41#
18 I	.26#	-.04	.16

correlation for the item with its own scale.

TABLE 10 (continued)

QUESTION (ITEM)	CORRELATION WITH		
	INTERNAL SCALE	POWERFUL OTHERS SCALE	CHANCE SCALE
19 C	-.05	.31	.49#
20 I	.28#	-.12	-.19
21 P	-.10	.26#	.24
22 P	-.08	.22#	.09
23 I	.12#	-.21	.01
24 C	.03	.14	.35#
25 I	.28#	.09	-.05
26 P	.08	.24#	.31
27 C	-.04	.04	.31#
28 I	.30#	-.04	-.09
29 P	-.03	.18#	-.05
30 C	-.03	.20	.46#
31 P	-.02	.25#	.08
32 C	.03	.18	.50#
33 I	.31#	-.06	.09
34 C	.03	.22	.45#
35 I	.37#	.03	.09
36 P	-.04	.25#	.05

I = Item from INTERNAL scale.

P = Item from POWERFUL OTHERS scale.

C = Item from CHANCE scale.

TABLE 11

SCALE MEANS BY GROUP AND GENDER

GROUP	A		B		C		D		E		F		G		H	
SCALE	MALE	FEMALE	M	F	M	F	M	F	M	F	M	F	M	F	M	F
INTERNAL	63.6	64.2	63.3	62.7	62.5	62.8	60.4	63.5	66.1	61.7	62.8	62.2	66.2	69.7	68.3	62.6
POWERFUL OTHERS	50.6	48.8	50.2	46.5	48.2	49.7	47.5	50.9	54.8	51.0	49.8	51.1	49.4	47.0	43.0	54.9
CHANCE	41.2	38.0	38.8	39.2	39.9	42.0	37.3	47.8	47.1	43.6	41.7	36.0	37.2	38.5	33.5	38.4

GROUP	I		J		K		L		M		N		O		TOTALS	
SCALE	M	F	M	F	M	F	M	F	M	F	M	F	M	F	MALE	FEMALE
INTERNAL	61.4	62.7	60.3	60.8	59.9	58.9	66.0	63.6	65.3	62.6	61.7	63.4	61.0	66.3	63.3	63.0
POWERFUL OTHERS	52.4	50.3	50.2	46.7	51.0	54.2	46.5	52.9	50.5	50.0	52.4	51.0	46.5	52.4	49.6	50.2
CHANCE	43.4	41.1	39.7	39.3	50.0	44.7	42.4	52.6	47.6	46.2	47.1	39.5	46.5	43.9	41.9	42.2

TABLE 12

STANDARD DEVIATIONS BY GROUP AND GENDER

SCALE \ GROUP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	TOTAL POP^N
INTERNAL	5.3	6.6	4.8	6.4	6.2	6.9	7.4	7.8	6.8	8.1	6.2	6.3	4.9	5.5	6.7	6.6
POWERFUL OTHERS	5.9	7.5	6.7	7.7	8.4	7.4	8.4	9.6	5.7	7.6	6.9	8.2	5.9	7.9	9.0	7.4
CHANCE	11.3	9.7	7.7	10.3	9.5	11.1	7.1	9.4	8.1	8.5	7.5	12.4	11.3	9.3	12.0	10.2

SCALE	MALE	FEMALE
INTERNAL	6.5	6.7
POWERFUL OTHERS	7.7	7.2
CHANCE	10.6	10.0

TABLE 13

Correlations between items and their respective health locus of control sub scale

	CONSTRUCT	ITEM (QUESTION)	GENERAL SUB SCALE	ITEM (QUESTION)	SPECIFIC SUB SCALE
	fitness	7	.18	20	.19
INTERNAL	appearance	2	.24	23	.24
	acceptance	15	.22	25	.21
SCALE	disagreeing	10	.14	28	.23
	worries	5	.06	33	.34
	contentment	18	.14	35	.35
	fitness	13	.10	21	.20
POWERFUL	appearance	8	.14	22	.30
	acceptance	3	.13	26	.17
OTHERS	disagreeing	16	.04	29	.10
	worries	11	.08	31	.25
SCALE	contentment	6	.14	36	.18
	fitness	1	.42	19	.50
CHANCE	appearance	14	.30	24	.42
	acceptance	9	.42	27	.32
SCALE	disagreeing	4	.34	30	.42
	worries	17	.33	32	.51
	contentment	12	.29	34	.38

TABLE 14

Correlations between each pair of items (by scale)

	fit.	app.	acc.	dis.	wor.	con.
fitness	1.0					
appearance	.11	1.0				
acceptance	.15	.14	1.0			
disagreeing	.25	.12	.17	1.0		
worries	.16	.15	.08	.07	1.0	
contentment	.03	.14	.24	.07	.33	1.0

INTERNAL SCALE

	fit.	app.	acc.	dis.	wor.	con.
fitness	1.0					
appearance	.21	1.0				
acceptance	.19	.22	1.0			
disagreeing	.04	.02	- .01	1.0		
worries	.07	.22	.14	.05	1.0	
contentment	.14	.09	.12	.13	.09	1.0

POWERFUL OTHERS SCALE

	fit.	app.	acc.	dis.	wor.	con.
fitness	1.0					
appearance	.40	1.0				
acceptance	.36	.25	1.0			
disagreeing	.35	.34	.30	1.0		
worries	.51	.40	.31	.34	1.0	
contentment	.39	.25	.36	.35	.39	1.0

CHANCE SCALE

TABLE 15

Correlations between pairs of items and the respective health locus of control scale

CONSTRUCT	INTERNAL	POWERFUL OTHERS	CHANCE
fitness	.51	.54	.74
appearance	.48	.56	.66
acceptance	.54	.53	.62
disagreeing	.54	.44	.66
worries	.57	.49	.73
contentment	.58	.50	.66

TABLE 16

Correlations between sub scales and the respective health locus of control scale

	INTERNAL	GENERAL	SPECIFIC
INTERNAL	1.0		
GENERAL	.80	1.0	
SPECIFIC	.84	.34	1.0

	POWERFUL OTHERS	GENERAL	SPECIFIC
POWERFUL OTHERS	1.0		
GENERAL	.81	1.0	
SPECIFIC	.84	.36	1.0

	CHANCE	GENERAL	SPECIFIC
CHANCE	1.0		
GENERAL	.84	1.0	
SPECIFIC	.87	.48	1.0

TABLE 17

GROUP / QUESTION	A N=26	B N=25	C N=17	D N=20	E N=18	F N=17	G N=19	H N=16	I N=28	J N=28	K N=20	L N=25	M N=21	N N=19	O N=11	MALE N=153	FEMALE N=157	TOTAL N=310
The NEWNESS Scale																		
55	5.0	5.2	5.1	4.8	4.4	4.9	5.3	4.9	5.3	4.8	4.7	4.8	4.6	4.4	4.5	4.8	4.9	4.9
59	5.2	4.7	5.1	5.2	5.2	5.2	5.4	4.9	5.2	4.6	5.1	5.3	4.9	5.2	4.4	5.0	5.1	5.1
SCALE MEAN	10.2	9.9	10.2	10.1	9.6	10.1	10.7	9.8	10.5	9.4	9.8	10.0	9.5	9.6	9.0	9.9	10.0	9.9
The GOOD HEALTH Scale																		
50	4.8	5.4	5.8	6.0	5.4	5.9	5.8	5.2	5.6	5.2	5.1	5.8	5.4	5.6	5.3	5.4	5.5	5.5
51	5.1	5.2	5.9	5.2	4.9	5.1	5.6	4.9	5.6	5.6	4.7	4.6	6.0	5.2	4.7	5.1	5.4	5.2
54	6.1	5.2	6.2	6.0	5.3	6.7	6.5	5.4	5.9	5.7	5.8	5.4	5.7	6.1	5.4	5.7	6.0	5.8
57	2.1	2.3	2.2	2.8	3.0	1.9	2.0	2.2	2.7	2.4	2.8	2.8	2.9	2.4	3.4	2.6	2.4	2.5
SCALE MEAN	16.0	15.8	17.9	17.3	15.7	17.7	17.8	15.5	17.2	16.6	15.6	15.9	17.1	16.8	15.4	16.2	16.9	16.6

TABLE 18

THE NEWNESS Scale - Correlations Between Items

QUESTION (ITEM)	55	59	
55	1.0		N=310
59	.30**	1.0	

** P < .001 Alpha = .46

TABLE 19

The GOOD HEALTH Scale - Correlation between Items

QUESTION (ITEM)	50	51	54	57	
50	1.0				N=310
51	.17*	1.0			
54	.25**	.64**	1.0		
57	- .33**	- .64**	- .54**	1.0	

* P < .01 Alpha = -0.15

** P < .001 Alpha without Q 57 = .35

TABLE 20

GROUP / QUESTION	A N=26	B N=25	C N=17	D N=20	E N=18	F N=17	G N=19	H N=16	I N=28	J N=28	K N=20	L N=25	M N=21	N N=19	O N=11	MALE N=153	FEMALE N=157	TOTAL N=310
The RISK TAKING Scale																		
53	4.3	5.1	5.5	4.4	5.4	4.7	5.0	5.3	5.0	5.0	4.9	5.6	5.0	4.1	5.9	5.0	4.9	5.0
58	4.5	5.1	4.8	4.6	4.9	4.9	5.0	5.0	4.6	4.6	4.5	4.7	4.4	4.2	5.9	5.0	4.5	4.7
SCALE MEAN	8.8	10.2	10.3	9.0	10.3	9.6	10.0	10.3	9.6	9.5	9.4	10.3	9.5	8.3	11.8	10.0	9.4	9.7
The SUSCEPTIBILITY Scale																		
49	5.9	5.2	4.6	4.6	4.1	5.5	5.0	4.6	4.8	4.9	4.7	4.0	4.7	4.8	5.1	4.9	4.8	4.8
52	5.9	6.0	6.1	6.3	5.8	6.3	6.4	6.0	6.1	5.6	5.3	5.4	5.5	5.8	5.5	5.8	6.0	5.9
56	5.1	4.8	4.7	5.3	4.7	4.8	4.7	4.3	4.8	4.6	3.9	5.2	4.5	5.6	5.7	5.0	4.7	4.8
60	4.9	4.7	5.4	5.3	5.6	5.3	5.7	4.7	4.7	5.0	4.4	5.0	4.6	5.2	4.9	5.3	4.7	5.0
SCALE MEAN	21.8	20.7	20.8	21.5	20.2	22.0	21.8	19.6	20.4	20.2	18.3	19.6	19.3	21.4	21.3	20.9	20.2	20.6

TABLE 21

The RISK TAKING Scale - Correlations Between Items

QUESTION (ITEM)	53	58	
53	1.0		N=310
58	.54**	1.0	

** P < .001 Alpha = .70

TABLE 22

The SUSCEPTIBILITY Scale - Correlations Between Items

QUESTION (ITEM)	49	52	56	60	
49	1.0				N=310
52	.02	1.0			
56	.11	.12	1.0		
60	.07	.21**	.31**	1.0	

** P < .001 Alpha = .38

TABLE 23

Correlations Between Sub Scales and Health Locus of Control Scales

SUB SCALE	HEALTH LOCUS OF CONTROL SCALE		
	INTERNAL	POWERFUL OTHERS	CHANCE
RISK TAKING	.10	.07	.08
NEWNESS	.15*	.01	-.22**
GOOD HEALTH	.16*	-.02	-.29**
SUSCEPTIBILITY	.17*	-.08	-.22**

* $P < .01$

** $P < .001$

TABLE 24

The FITNESS Construct - Correlations Between Items

GENERAL

QUESTION (ITEM)	1 (C)	7 (I)	13 (P)	
1(C)	1.0			N=310
7(I)	- .25**	1.0		
13(P)	.20**	- .04	1.0	
37	-.07	.31**	.02	

SPECIFIC

QUESTION (ITEM)	19 (C)	20 (I)	21 (P)	
19(C)	1.0			N=310
20(I)	- .26**	1.0		
21(P)	.24**	- .30**	1.0	
43	.14	.08	.06	

** $P < .001$

I = Internal

P = Powerful Others

C = Chance

TABLE 25

The APPEARANCE Construct - Correlations Between Items

GENERAL

QUESTION (ITEM)	2 (I)	8 (P)	14 (C)	
2(I)	1.0			
8(P)	- .16*	1.0		N=310
14(C)	- .02	.32**	1.0	
38	.29**	.02	.02	

SPECIFIC

QUESTION (ITEM)	22 (P)	23 (I)	24 (C)	
22(P)	1.0			
23(I)	- .62**	1.0		N=310
24(C)	- .07	.10	1.0	
44	.17*	-.06	.01	

* $P < .01$

** $P < .001$

I = Internal

P = Powerful Others

C = Chance

TABLE 26

The ACCEPTANCE BY FRIENDS Construct - Correlations Between Items

GENERAL

QUESTION (ITEM)	3 (P)	9 (C)	15 (I)	
3(P)	1.0			N=310
9(C)	.08	1.0		
15(I)	- .11	.07	1.0	
39	.12	.02	.17*	

SPECIFIC

QUESTION (ITEM)	25 (I)	26 (P)	27 (C)	
25(1)	1.0			N = 310
26(P)	- .04	1.0		
27(C)	- .22**	.15*	1.0	
45	.41**	-.04	- .25**	

* P < .01

** P < .001

I = Internal

P = Powerful Others

C = Chance

TABLE 27

The DISAGREEING WITH FRIENDS Construct - Correlations Between Items

GENERAL

QUESTION (ITEM)	4 (C)	10 (I)	16 (P)	
4(C)	1.0			N=310
10(I)	-.02	1.0		
16(P)	- .01	.14	1.0	
40	.02	.33**	.09	

SPECIFIC

QUESTION (ITEM)	28 (I)	29 (P)	30 (C)	
28(I)	1.0			N=310
29(P)	- .09	1.0		
30(C)	- .11	- .04	1.0	
46	.43**	.06	- .13	

** P < .001

I = Internal

P = Powerful Others

C = Chance

TABLE 28

The SORTING OUT WORRIES Construct - Correlations Between Items

GENERAL

QUESTION (ITEM)	5 (I)	11 (P)	17 (C)	
5(I)	1.0			
11(P)	- .29**	1.0		N=310
17(C)	.10	.03	1.0	
41	.07	.06	- .07	

SPECIFIC

QUESTION (ITEM)	31 (P)	32 (C)	33 (I)	
31(P)	1.0			N=310
32(C)	.03	1.0		
33(I)	- .34**	.06	1.0	
47	.05	- .04	.19**	

** P< .001

I = Internal

P = Powerful Others

C = Chance

TABLE 29

The CONTENTMENT Construct - Correlations Between Items

GENERAL

QUESTION (ITEM)	6 (P)	12 (C)	18 (I)	
6(P)	1.0			N=310
12(C)	.07	1.0		
18(I)	- .13	.05	1.0	
42	- .13	- .22**	.01	

SPECIFIC

QUESTION (ITEM)	34 (C)	35 (I)	36 (P)	
34(C)	1.0			N=310
35(I)	.04	1.0		
36(P)	.03	- .06	1.0	
48	.05	.09	.14	

** $P > .001$

I = Internal

P = Powerful Others

C = Chance

TABLE 30

Correlation of Each Construct in its General and Specific Context

CONSTRUCT	SCALE		
	INTERNAL	POWERFUL OTHERS	CHANCE
Fitness	.32**	.29**	.23**
Appearance	-.07	.13	.01
Acceptance by Friends	.16*	.08	.19**
Disagreeing with Friends	.36**	.41**	.24**
Sorting out worries	.08	.13	.23**
Contentment	.40**	.28**	.21**
SUB SCALES	.34**	.36**	.48**

* $P < .01$

** $P < .001$

TABLE 31

Correlations Between Items Representing The Same Construct

CONSTRUCT	ITEMS DENOTING THE INTERNAL AND POWERFUL OTHERS SCALES	ITEMS DENOTING THE INTERNAL AND CHANCE SCALES	ITEMS DENOTING THE POWERFUL OTHERS AND CHANCE SCALES.
FITNESS (- general	-.04	-.25**	.20**
(- specific	-.30**	-.26**	.24**
APPEARANCE (- general	-.10	-.01	.13
(- specific	-.62**	.10	-.07
ACCEPTANCE (-general	-.10	.07	.08
BY FRIENDS (- specific	-.04	-.22**	.15*
DISAGREEING (-general	.14	-.02	-.01
WITH FRIENDS (-specific	-.09	-.11	-.04
SORTING OUT (-general	-.29**	.10	.03
WORRIES (-specific	-.34**	.06	.03
CONTENTMENT (-general	-.13	.05	.07
(-specific	-.06	.04	.03
TOTAL SCALE	-.09	-.01	.35**

* P < .01

** P < .001

TABLE 32

VALUATION OF CONSTRUCTS

GROUP / CONSTRUCT	A N=26	B N=25	C N=17	D N=20	E N=18	F N=17	G N=19	H N=16	I N=28	J N=28	K N=20	L N=25	M N=21	N N=19	O N=11	MALE N=153	FEMALE N=157	TOTAL N=310
FITNESS G	5.5	5.4	5.8	5.9	6.1	6.3	6.4	5.8	5.6	5.1	5.6	6.0	5.6	6.0	5.4	5.8	5.6	5.7
FITNESS S	3.8	3.4	4.2	4.3	4.3	3.5	4.0	3.4	3.6	3.4	4.1	4.2	3.9	3.9	3.9	3.9	3.8	3.8
APPEARANCE G	5.5	5.7	5.8	5.8	5.4	5.6	6.4	5.7	5.4	5.2	5.5	5.2	5.8	5.6	5.4	5.5	5.7	5.6
APPEARANCE S	6.3	5.6	6.1	6.2	5.8	5.9	6.7	6.3	6.5	6.0	6.0	5.9	5.8	5.7	6.0	6.0	6.1	6.0
ACCEPTANCE G	5.6	6.0	5.9	6.0	5.8	6.5	6.2	5.8	5.7	5.5	5.7	5.8	5.9	5.4	6.2	5.8	5.9	5.8
ACCEPTANCE S	5.6	5.5	5.5	5.7	5.3	6.1	5.8	6.1	5.9	5.4	5.7	5.6	5.8	5.7	6.2	5.6	5.8	5.7
DISAGREEING G	5.6	4.8	5.9	5.1	5.7	5.0	5.8	5.9	5.5	5.2	5.3	5.0	5.0	5.3	5.9	5.4	5.3	5.4
DISAGREEING S	5.5	4.9	5.7	5.1	5.4	5.1	5.6	6.0	5.1	4.8	5.1	5.1	5.1	5.3	5.8	5.3	5.2	5.3
WORRIES G	6.0	5.8	5.3	6.3	6.2	6.2	6.3	6.1	5.5	5.1	5.3	5.6	5.9	5.7	5.7	5.7	5.8	5.8
WORRIES S	5.4	5.3	5.9	6.2	5.8	5.8	6.0	5.9	5.3	5.3	5.2	5.0	5.8	5.4	4.8	5.6	5.4	5.5
CONTENMENT G	6.6	6.6	6.2	6.6	6.4	6.7	6.7	6.7	6.5	5.7	6.3	6.2	6.1	6.2	5.8	6.3	6.4	6.4
CONTENMENT S	5.5	5.8	5.3	5.9	5.7	6.3	6.2	5.9	5.6	4.9	5.6	5.6	5.6	5.7	4.7	5.6	5.7	5.6

TABLE 33

Correlations Between the Valuation of Constructs and the Items Representing the Health Locus of Control Scales

CONSTRUCT		HEALTH LOCUS OF CONTROL SCALES		
		INTERNAL	POWERFUL OTHERS	CHANCE
FITNESS	(general	.31**	.02	-.07
	(specific	.08	.06	.14
APPEARANCE	(general	.29**	.02	.02
	(specific	-.06	.17*	.01
ACCEPTANCE BY FRIENDS	(general	.17*	.12	.02
	(specific	.41**	-.04	-.25**
DISAGREEING WITH FRIENDS	(general	.33**	.09	.02
	(specific	.43**	.06	-.13
SORTING OUT WORRIES	(general	.07	.06	-.07
	(specific	.19**	.05	-.04
CONTENTMENT	(general	.01	-.13	-.22**
	(specific	.09	.14	.05

* $P < .01$

** $P < .001$

TABLE 34

CONCEPTUALISATION OF HEALTH - Item Means By Group And Gender

GROUP / QUESTION	A N=26	B N=25	C N=17	D N=20	E N=18	F N=17	G N=19	H N=16	I N=28	J N=28	K N=20	L N=25	M N=21	N N=19	O N=11	MALE N=153	FEMALE N=157	TOTAL N=310
61	5.6	5.5	5.9	6.1	6.3	6.3	6.5	6.0	5.9	5.4	5.7	6.0	5.7	6.3	6.3	6.1	5.8	5.9
62	4.1	4.0	5.2	5.1	5.1	4.6	5.4	4.6	4.9	4.0	5.4	4.8	4.4	4.3	5.1	4.7	4.7	4.7
63	3.5	3.1	4.6	4.2	5.2	3.9	3.6	3.5	4.0	3.2	4.9	4.3	3.9	4.8	4.0	3.9	4.0	4.0
64	5.7	5.9	5.5	6.5	6.1	6.1	6.0	6.2	5.7	5.6	5.9	6.1	6.1	5.9	6.3	5.9	6.0	5.9
65	5.7	5.7	4.9	6.0	5.8	6.2	6.0	6.1	5.4	5.6	5.3	5.3	5.4	5.6	5.4	5.7	5.6	5.6
66	4.4	3.8	4.3	4.4	4.1	3.9	4.4	4.1	4.2	3.6	4.5	4.2	4.2	3.6	4.3	4.1	4.1	4.1
67	5.1	4.8	5.4	5.5	5.3	5.2	5.2	4.6	5.2	4.5	5.7	5.4	4.9	4.8	5.0	5.1	5.1	5.1
68	3.9	3.1	4.3	4.3	4.4	3.5	3.4	3.2	3.9	2.9	3.5	3.8	4.3	4.2	2.6	3.8	3.7	3.7
69	5.8	5.6	6.1	6.1	6.2	5.9	6.5	6.1	5.9	5.4	5.6	6.1	5.8	5.4	6.0	5.8	6.0	5.9
70	4.8	4.6	5.3	5.0	5.6	4.9	5.0	4.8	4.8	4.4	5.3	5.0	5.4	4.0	5.2	4.8	5.0	4.9
71	5.0	4.7	5.5	5.1	4.8	4.5	4.7	5.0	4.4	4.1	5.2	4.5	5.5	5.0	4.8	4.9	4.7	4.8
72	5.0	5.3	5.2	4.7	5.5	4.6	4.8	4.3	4.5	4.0	4.9	4.9	4.7	4.5	5.1	4.8	4.7	4.8
73	6.3	6.0	5.8	6.1	6.2	5.6	6.1	5.8	6.0	4.9	5.6	6.0	5.9	5.7	6.2	5.8	5.9	5.9
74	5.1	4.6	5.3	5.9	5.6	5.0	5.5	4.8	4.7	4.2	5.1	5.2	5.5	5.3	4.3	5.1	5.1	5.1

TABLE 35

CONCEPTS OF HEALTH - Correlations Between Items

QUESTION (ITEM)	61	62	63	64	65	66	67	68	69	70	71	72	73	74
61	1.0													
62	.18*	1.0												
63	.22**	.46**	1.0											
64	.34**	.28**	.16*	1.0										
65	.15*	.05	.03	.26**	1.0									
66	.13	.51**	.24**	.25**	.13	1.0								
67	.10	.61**	.28**	.33**	.10	.58**	1.0							
68	.17*	.41**	.63**	.12	.02	.30**	.30**	1.0						
69	.21**	.45**	.23**	.35**	.24**	.34**	.51**	.15*	1.0					
70	.06	.65**	.43**	.28**	.15*	.51**	.54**	.40**	.45**	1.0				
71	.23**	.46**	.37**	.27**	.17*	.55**	.44**	.38**	.41**	.58**	1.0			
72	.11	.40**	.26**	.21**	.19**	.36**	.39**	.26**	.43**	.45**	.43**	1.0		
73	.15*	.46**	.28**	.42**	.18*	.36**	.53**	.28**	.56**	.47**	.41**	.48**	1.0	
74	.32**	.22**	.36**	.20**	.20**	.22**	.16*	.40**	.27**	.31**	.29**	.24**	.27**	1.0

N=310

* P < .01

** P < .001

Alpha = .87

TABLE 36

Correlations Between Individual Health Concept Items and Health Locus of Control

QUESTION (ITEM)	HEALTH LOCUS OF CONTROL SCALES		
	INTERNAL	POWERFUL OTHERS	CHANCE
61	.28**	.07	-.03
62	-.02	.15*	.11
63	.08	.23**	.12
64	.18	.06	.00
65	.16	.03	-.10
66	.04	.22**	.23**
67	.08	.15*	.19**
68	.06	.18*	.08
69	.15*	.07	-.03
70	.03	.17*	.16*
71	.07	.15*	.17*
72	.05	.09	.04
73	.17*	.15*	.06
74	.11	.14	-.06

* $P < .01$

** $P < .001$

TABLE 37

CONCEPTS OF HEALTH and HEALTH LOCUS OF CONTROL - correlations

CONCEPTS OF HEALTH CATEGORIES	HEALTH LOCUS OF CONTROL SCALES		
	INTERNAL	POWERFUL OTHERS	CHANCE
Medical	.28**	.06	-.09
Prescriptive	.10	.23**	.06
Social	.02	.22**	.20**
Achievement	.07	.15*	.17*
Positive Mental	.18*	.15*	.09
Negative Mental	.05	.09	.04

* $P < .01$

** $P < .001$

TABLE 38

The NOT SURE Responses by Group and Gender

GROUP	A M=15 F=11	B 13 12	C 8 9	D 11 9	E 10 8	F 9 8	G 10 9	H 9 7	I 11 17	J 12 16	K 11 9	L 11 14	M 10 11	N 9 10	O 4 7	TOTAL N=310
MALE SCORE	117	113	57	117	60	52	60	55	95	125	153	115	88	104	37	1348
MALE RATE	7.8	8.7	7.1	10.6	6.0	5.8	6.0	6.1	8.6	10.4	13.9	10.4	8.8	11.5	9.2	8.8
FEMALE SCORE	73	91	102	67	95	64	72	47	169	128	149	161	102	98	52	1470
FEMALE RATE	6.6	7.6	11.3	7.4	11.9	8.0	8.0	6.7	9.9	8.0	16.5	11.5	9.3	9.8	7.4	9.4
FULL GROUP SCORE	190	204	159	184	155	116	132	102	264	253	302	276	190	202	89	2818
FULL GROUP RATE	7.3	8.2	9.3	9.2	8.6	6.8	6.9	6.4	9.4	9.0	15.1	11.0	9.0	10.6	8.1	9.1