The integration of visually impaired students in further education

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Title: the integration of visually impaired students in mainstream further education.

This thesis is in three parts. Part One reviews the general literature on the integration debate and looks at the debate in relation to the specific field of visual impairment. This examines the issues and gives a broad context to the particular area of the visually impaired student in mainstream further education.

Part Two is a review of the field of integration support with particular reference to further education and individuals with visual impairment. There exist real concerns about the ability of the mainstream to provide an environment that will ensure that these individuals maximise their learning potential. These concerns seem principally related to making appropriate support services available so that the advantages of mainstreaming are not outweighed by the disadvantages of reduced levels of support.

Part Three is a research project based on further education colleges in the Midlands. It attempts to identify and examine the support services that enable successful integration of visually impaired students. It also attempts to evaluate these factors to establish their relative value in this mainstreaming process. The evaluation is from the perspective of visually impaired students in further education rather than that of professionals in the visually impaired field. This perspective is clearly relevant and has not been given due weight in the literature to-date. The thesis goes on to compare these findings to the data from other surveys which were concerned to identify and evaluate these support services from the perspective of the professional in this field.
The Integration of Visually Impaired Students in Further Education.

by

NEIL TODD

A DOCTORAL THESIS

Submitted in partial fulfilment of the requirements for the award of Doctor of Philosophy of the Loughborough University of Technology

December, 1992

(C) by N. Todd, 1992
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1. Introduction.

1.1 General Outline of the Thesis.

This thesis is in three main parts. Part One reviews the general literature on the integration debate and looks at the debate in relation to the specific field of visual impairment. This is done to examine the issues and to give a broad context to the particular area of the visually impaired student in mainstream further education.

The term, "visually impaired student" is taken to mean one who is registered as partially sighted or blind. The "mainstream" is regarded as the area where courses are followed in full and open participation with the whole range of students. It is not taken to include discrete provision, even where this is offered as part of a further education college's range of courses.

"Further education" is a complex and not easily defined sector. As an indication of this Mansell has noted that, "some one thousand four hundred different qualifications exist in F.E.". (Chitty, 1991). Cantor and Roberts have commented on its, "enormous complexity". (Cantor and Roberts, 1983). They go on to state, "The boundaries of further education are not easy to define. At one extreme, it caters for the varied needs of the sixteen to nineteen age group by offering a very wide range of courses to students of greatly differing abilities. It has always been distinguished by its provision of vocational courses designed to train craftsmen and technicians and, more recently, ... it has increasingly concerned itself with prevocational courses. Its contribution to the provision of 'academic' courses such as GCSE has been, and remains, substantial. At the other extreme, it encompasses almost
half of our national provision of higher education, or advanced further education. ... Catering as it does for students of all ages beyond sixteen, the further education sector offers a considerable amount of what might otherwise be described as adult education; it is also the chief vehicle in this country for the dissemination of recurrent or continuing education. Like the educational system as a whole, it attempts to minister to the needs of our multi-racial society by providing for the education of ethnic minorities. It also increasingly makes provision for girls and women and for the special educational needs of the handicapped." (ibid., p.214). It is important to note that this is an area where change is frequent. Mansell has pertinently observed that, "F.E. is a diverse and dynamic sector. ... The few writers who attempt to monitor and describe its developments, such as Cantor and Roberts (1986), are often forced to produce successive editions to reflect the changes that are taking place." (Chitty, 1991).

Part Two of this thesis is a review of the field of integration support with particular reference to further education and individuals with visual impairment. The trend towards further mainstream integration of students with visual impairments seems to be increasingly established. There are very real concerns felt by those who have questioned the ability of the mainstream to provide an environment that will ensure that these individuals maximise their learning potential. These concerns seem principally related to making appropriate support services available to these individuals so that the advantages of mainstreaming are not outweighed by the disadvantages of reduced levels of support. This is an area of professional interest to the author who is employed as a Senior Lecturer for Learning Support (Visual Impairment) at a further education college. The author's work is principally concerned with ensuring effective support for visually impaired students.
Part Three of the thesis is concerned with a research project to identify and examine the support services that enable successful integration of visually impaired students in further education. It also attempts to evaluate these services to establish their relative value in this mainstreaming process. The evaluation is from the perspective of visually impaired students in further education rather than that of professionals in the visually impaired field. This perspective is clearly important and has not been given due weight in the literature to-date.

1.2 A Note on the Literature.

The area of visually impaired students in further education lacks an extensive literature of its own. Indeed, further education as a whole is not very well served in this respect. Bradley and Hegarty have commented in general terms about special education research that, "very little work has been carried out in this country ... on the 16-19 age group". (Bradley and Hegarty, 1981, p.5). Cantor and Roberts have commented on the value of looking at related fields where this is relevant. "There is a great deal of overlap between further education on the one hand and secondary schools and adult education on the other. Consequently there is much research activity that is relevant to all three sectors of the education system and it is important to be aware of what is going on in contiguous fields." (Cantor, and Roberts, 1983, p.194). This thesis has adopted the above perspective and quotes extensively from the area of "overlap" where this seems relevant to the discussion and provides the necessary context.
There is, on the other hand, a well developed literature on the area of visual impairment. This is well served by periodicals and specialist journals and the thesis makes full use of these sources.
Part One.

A Review of the Trends, Developments, Research and Legislation on the Question of the Integration of Special Education Provision with Particular Reference to Visual Impairment.

2. Outline of Part One.

The first part of the thesis looks at the different definitions of integration that have been advanced. There seems to be a wide acceptance of generalised definitions and the first part begins by considering these. It goes on to look at more detailed definitions and particularly those that have been associated with the idea of expanding the provision of comprehensive education to include children and young people with special educational needs. It then considers the trends and developments in the field of special education that are related to the question of integrated provision. These include the movement away from the dominant emphasis on the clinical approach to assessment of special educational needs and the greater emphasis on the needs of individuals within their particular environments. This development has been described as the change from the, "within-child approach to models that took in interaction between within-child and environmental factors". (Hegarty and Evans, 1985, p.1.). This led to a focus on different ways of "evaluating the effectiveness of varying educational practices". (Loc. cit.). Next, the thesis is concerned with reviewing the sociological, educational and technological research as it relates to this question. Many studies have examined the issues involved on the question of integration and their findings are examined.
The thesis moves on to look at the role of the voluntary sector in this area of educational provision and, in particular, the influence exerted by the this sector on the development of integration policy and practice. This area has attracted comment and it is examined in the light of criticism of possible, "institutional resistance". (Booth and Potts, 1983, p.37). The final section of Part One looks at the impact of legislation as it affects this aspect of special education, both from a national and international perspective.
3. Definitions of Integration.

3.1 General Definitions.

Jamieson provides us with a word of caution when considering general definitions of integration. She notes, "Integration as a descriptive term used in talking about schooling is elusive and imprecise. There is a lack of uniformity in its use." (Jamieson, et al., 1977, p.59). She goes on to suggest that, "integration is an ideal: it is like equality - something that may never be attained to a degree that is beyond further challenge." (ibid., p.60). This has been an aspect of the general debate on integration where some schemes have been described as not 'fully integrated' by those who claim to represent a more radical position. There is, nonetheless, a large measure of agreement as to the meaning of the concept.

In the most general terms it is seen as a making whole of disparate parts. Jones states, "the term integration - derived from the Latin word integrare, meaning to make whole - refers to the process of enabling children with special educational needs to maximise their opportunities, potential and personal fulfilment in their families, school and the wider community". (Cohen and Cohen, 1986, p.303). Nussbaum writes in terms of, "coordination des activities de plusiers organismes en vue d'un fonctionnement harmonieux". (Nussbaum, 1979). Hegarty provides a similar generalised definition. "Integration in its widest usage entails a process of making whole, of combining different elements into a unity. As used in special education, it refers to the education of pupils with special needs in ordinary schools. Integration provides a "natural" environment where the pupils are alongside their peers and freed from the isolation that is characteristic of much special school
placement." (Hegarty et al., 1981, p.3). Booth and Potts echo the phrase, "maximise their opportunities, potential and personal fulfilment" (Booth and Potts, 1983, p.62) in their statement of the aims of integration. Possibly the origin of this phrase was the Warnock Report (Special Educational Needs, 1978) which described integration in terms of, "the conviction that as far as is humanly possible, handicapped people should share the opportunities for self-fulfilment enjoyed by other people". (ibid.). These opportunities were defined in the report as, "enlarging a child's knowledge, experience and imaginative understanding, and thus his awareness of moral values and capacity for enjoyment: and ... to enable him to enter the world after formal education is over as an active participant in society and responsible contributor to it, capable of achieving as much independence as possible". (ibid, P.5).

The Fish Report (Educational Opportunities For All? The report of the committee reviewing provision to meet special educational needs, chaired by Mr. John Fish. ILEA, 1985) also gives a generalised statement of the opportunities that emanate from integrated education. "The long term aims of education for all children and young people include the achievement of responsible personal autonomy and full participation in the communities in which they live. The aims of education for children and young people with disabilities and significant difficulties are the same as those for all children and young people. They should have opportunities to achieve these aims, to associate with their contemporaries, whether disabled or not, and have access to the whole range of opportunities in education, training, leisure and community activities available to all. Disability and significant difficulties do not diminish the right to equal access to, and participation in, society." (ibid, p.4). In 1989 the National Federation of the Blind
(NFB) and the Association of Blind and Partially Sighted Teachers and Students (ABAPSTAS) gave their view on the meaning of integration. "We believe that people with disabilities should play a full part in the world around them. They have the right to share with able-bodied people both the problems and the achievements of life, whether at school, at work, or in personal and social relationships." (NFB & ABAPSTAS, 1989, p.1).

The idea of society being made "whole" by integrating those with special educational needs has been taken a stage further by the recognition that this involves change on both sides. Adaptation is required by the majority as well as the minority group. Hegarty has commented that it is a "mutually adaptive interaction". (Hegarty et al, 1981, p.5). There is the tendency, if this is not remembered, to regard integration as something that is done to them. "It is not compatible with the richer sense of the integration as the creation of a new entity through the fusion of the different parts." (Loc. cit.). This is evident when Jones defines integration as, "part of the change process in society aimed at deinstitutionalising handicapped persons". (Cohen and Cohen, 1986, p.303). Clearly, the "change process" needs to take place in society as well as within the minority group. This "mutually adaptive interaction" is implicitly stated in the following statement from the Warnock Report. "Integration for the disabled means a thousand things. It means the absence of segregation. It means social acceptance. It means being able to be treated like everybody else. It means ... being educated up to university level with one's unhandicapped peers." (Special Educational Needs, 1978, p.99). The need for adaptation by society in general and schools in particular to those with special educational needs was seen to be an integral part of the integration process. In relation to the visually impaired Boldt has argued that, "it is not the capacity for
integration of visually impaired pupils which is at the centre of the debate, but the capacity and the preparedness of the accepting institutions, the people within them and the administrative apparatus". (Boldt, 1992, p.65).

Hegarty has drawn attention to the wider dimension of the integration debate. In his 1987 work he stated that, "What pupils who have difficulties need is education, not integration." (Hegarty, 1987, p.14). Integrating children and young people who have special educational needs into mainstream settings should be seen as a means to an ends. The intention is to secure the most appropriate and effective education for those children and young people. Clearly, if there is no change or only minimal change in the mainstream setting then integration is unlikely to secure appropriate and effective education. Adaptation, here, is clearly necessary for successful integration.

3.2 Extending Comprehensive Education.

This idea of adaptation of the mainstream to the special needs of children and young people has been linked by many writers to the concept of comprehensive education. Barton and Tomlinson have stated, "Egalitarian beliefs have, over the past twenty years, worked strongly in England towards the idea of educating all children within a common school". (Cohen and Cohen, 1986, p.42). The need for comprehensive education to adapt to children and young people with special educational requirements in order to ensure effective integration, has been frequently noted. Adams, representing the views of Chief Education Officers (CEOs) has stated, "Integration ... is a process whereby the education offered by ordinary schools becomes more differentiated and geared to meeting a wider range of pupil needs." (Adams, 1987, p.78). This is very similar to
Hegarty's statement, "What is at stake here is an extension of the comprehensive ideal. The initial inspiration of the comprehensive movement was to provide a rich and highly differentiated learning environment that would cater for pupils of widely differing abilities. Many pupils were still excluded however. ... If these are now to be catered for in the ordinary school, then a further extension of the notion of comprehensive education is required". (Hegarty et al., 1981, p.20). Warnock has stated, "The whole concept of children with peculiar needs ... must be a natural part of the comprehensive ideal." (Cohen and Cohen, 1986, p.42). Fish commented in a similar vein that, "The truly comprehensive school provides for a range of individual abilities and conditions including disabilities." (Fish, 1985). On the first page of their 1983 work, Booth and Potts state, "We define integration as the process of increasing the participation of children and young people in their communities. We see their involvement in the social and educational life of comprehensive nursery, primary and secondary schools as well as further and higher education as an integral part of this process." (Booth and Potts, 1983, p.1). The ILEA survey, Educational Opportunities For All? (1985) received evidence on this point. The report stated, "These submissions argue that the school system will not be fully comprehensive until it provides for all children and young people within the same schools and colleges." (ILEA, 1985).
3.3 The Political Dimension.

Clearly many writers see an extension of comprehensive education to include those with special educational needs as a logical development and one which acknowledges the necessity for adaptation in the majority setting as well as the minority one. In encompassing the idea of change in the majority setting some writers have commented on the political aspect that this represents. Cohen and Cohen note that, "Integration, at its core, is about social engineering, about changing societal values via the educational system. It is essentially a political issue inextricably linked with the concept of comprehensive education." (Cohen and Cohen, 1986, p.xvi). Booth and Potts, looking at the same point but from the opposite perspective, have commented, "The same selection philosophy which underpinned the separation of grammar and secondary modern is at the root of the existence of special schools." (Booth and Potts, 1983, p.24). This point was echoed by Barnes when he stated, "selection by ability sanctioned selection by disability". (Barnes, 1991, p.28). Barton and Tomlinson have noted that while there has been a trend towards comprehensive education, "these beliefs are equally counterbalanced by traditional pressures for selecting out an elite for high-status education." (Cohen and Cohen, 1986, p.42).

This point has been borne out quite clearly by developments in the education of visually impaired individuals. Jamieson noted that there was likely to be an increase in the integration of visually impaired children and young people due to the, "widespread application of the general comprehensive principle". (Jamieson et al., 1977). Cole has made a very similar statement that, "Arguments in favour of extending comprehensive education to all children with special educational needs ... will lead to more children ..
in ordinary schools. This seems particularly likely for children with physical or sensory disabilities". (Cole, 1986, p.142). It is possible, however, that these views have perhaps failed to give due weight to "the traditional pressures" to retain selection in this area of special education provision. The Vernon Report (1972) came under very strong criticism from some quarters because of its failure to address this very question. NFB/ABAPSTAS described this failure as a, "major deficiency" which ignored, "the desirability of comprehensive schooling for the visually handicapped". (NFB/ABAPSTAS, 1973, p.2).

NFB/ABAPSTAS went on to describe the organisation of provision for visually impaired individuals in terms of, "the present highly selective system of secondary education for the visually handicapped, with its channelling by 11+ selection procedures of a small percentage of visually handicapped pupils into special grammar schools ... and the rest (for the most part) into special 'secondary modern' type schools". (ibid., p. 7). They went on to comment, "If comprehensive education is for all, then room must be found for the visually handicapped in that "all". (Loc. cit.).

It is interesting that, to some extent, there are parallels to be found on this question across the field of sensory impairment. Educational provision for individuals with hearing impairment has traditionally been organised along lines similar to the provision for individuals with visual impairment. Mary Hare Grammar School and Burwood Park, "dominate the academic side of deaf education". (Swann and Briggs, 1982, p.12). The same could be said of Worcester New College for visually impaired students. This theme of selection in special education is further examined in Sections 4.3 and 5.2.

Jamieson has commented on this aspect of the general debate by stating that, "the current debate about integration ...
goes beyond education: what is involved is a wider question of ... societal attitudes". (Jamieson et al., 1977, p.58). This perspective seems at odds with the more generally accepted humanitarian approach to special education. Warnock has made clear her views on this, looking back to the 1970s. She states, "I thought then and still think that legislation concerned with the education of the handicapped must be ultimately humanitarian in its intention and spirit." (Cohen and Cohen, 1986, p.129). Barton and Tomlinson would disagree with this assessment. They have argued that special education policy, "is not solely the product of benevolent and enlightened attitudes. The motives are rooted in economic, professional and political vested interests." (ibid., p.37). Oliver has written, in classic materialist terms, of special education being part of the, "repressive state apparatus ... that removes disruptive and potentially disturbing children from ordinary schools regardless of whether their disruption is based upon handicap, impairment, behaviour or performance". (Oliver, 1985, p.83). Perhaps in reference to observations like this the NFB/ABAPSTAS have clearly felt the need to state that, "the presence of visually handicapped children in ordinary schools does not hinder the education of other pupils". (NFB/ABAPSTAS, 1989, p.1).

Oliver later extended his argument a stage further by stating, "Disabled people have begun to define disability not as personal tragedy requiring therapy but as collective oppression requiring political action." (Oliver, 1992, p.3). The British Council of Organisations of Disabled People (BCODP) has supported this argument further by making reference to institutionalised discrimination against disabled people in society. The BCODP has stated, "successive British governments have been reluctant to admit the existence of discrimination against disabled people. In contrast, several western countries, as politically diverse
as the United States and Sweden, have acknowledged the extent of institutional discrimination and have introduced anti-discrimination legislation in response." (BCODP, 1992, p.104). Barnes has argued in a similar way in relation to the specific field of education that, "institutional discrimination against disabled people is ingrained throughout the present education system" (Barnes, 1991, p.28). He goes on to consider the role of legislation, noting that, "race and gender laws introduced in the 1970s apply to pupils, students, teachers and others who work in the education system. ... No such policy exists with regards to disabled people". (ibid., p.50).

In America this strong legislative trend is demonstrated by the passing of the Americans with Disabilities Act, 1990 which gives statutory support for the civil rights of Americans with disabilities. In this country the private member's Civil Rights (Disabled Persons) Bill has failed to secure passage through the Westminster parliament. It was talked out by the Tory M.P., Robert Hayward, just before the general election in 1992. Alfred Morris, M.P., the Bill's originator commented, "We already accept that women and ethnic minorities need legal backing to achieve equal opportunities. So do people with disabilities." (Morris, 1992, p.287). A similar point is made, perhaps in a more academically materialist way by Abberley. He states, "As in the case of women and Black people, oppressive theories of disability systematically distort and stereotype the identities of their putative subjects, restricting their full humanity by constituting them only in their 'problem' aspects." (Booth et al., 1992, p.242). Oliver has commented on the importance of disability groups taking direct action to help secure this legislation. He argues that political demonstrations have made a difference. "Disabled people in the United States have undertaken sit-ins to ensure the passage of anti-discrimination legislation
on to the statute books." (Oliver, 1992, p.5). He goes on to describe some of the actions of British groups designed to produce the same result. "The disability movement in this country, as well as continuing to articulate its demands through formal political channels, has also participated in mass marches and rallies ... held demonstrations ... and embarked on campaigns of civil disobedience." (Loc. cit.).

It seems clear that there is a political dimension involved in the position of disability groups. In a similar way there is a political dimension to the question of the integration of special education as there would be in securing any social change. Obviously, there are disagreements over the extent of the influence of differing factors. It is as well to be aware, however, that there are other dimensions to the debate on integration other than "doing good to individual children". (Cohen and Cohen, 1986).

The definitions of integration examined above clearly have different emphases but there is, nonetheless, a wide area of agreement on the fundamental principle of the concept. Interest in the theme of integration has increased, both nationally and internationally, over the last two decades or more. The next part of the thesis looks at the trends and developments in special education that are related to this theme. Many of the definitions looked at in this opening section have originated from the emerging trends in this area.
4. Trends in Special Education Related to the Theme of Integration.

4.1 The Diminishing Influence of the Medical Model.

There has been a growing trend away from what has been termed the "medical model" approach to special education. Hegarty has described this approach. "Traditional arrangements were geared to ascertaining which children were in need of special education and assigning them to handicap categories." (Hegarty, 1987, p.15). The educational input into this process was limited and a negative emphasis on the disability of the individual, rather than a more positive emphasis on the abilities of the individual, was likely to result from this perspective. It was as if the most important thing about individuals was their disability. Bart has described this negative emphasis. "The handicaps of children with special needs have been thought of as defects or diseases of individuals." (Cohen and Cohen, 1986, p.x). Hegarty has described this emphasis in terms of, "focussing on the children's ... inherent limitations. It used a language of deficit and handicap." (Hegarty, 1987, p.14). Stainback and Stainback have gone on to argue that educationally the, "conceptualisation of children dichotomised into normal and exceptional" was wrong. "All students differ along continuums of intellectual, physical and psychological characteristics". (Stainback and Stainback, 1984, p.102). It was becoming increasingly clear that grouping pupils according to their common handicapping characteristics made less sense in educational terms, even if it was logical in a medical sense. Hegarty commented that, "The procedures used had a strong medical bias and were necessarily crude as far as educational planning was concerned." (Hegarty, 1987, p.15). Stainback and Stainback have argued in a similar way that, "A student who has little
or no vision, for example, is a whole human being with many intellectual, social, and psychological characteristics. Classification according to one or a few characteristics is minimally useful in planning a total educational program". (Stainback and Stainback, 1984, p.104).

The medical model's deficiencies have been noted increasingly and in this country its influence has declined as a result. But this is a fairly recent development. Cohen and Cohen have stated, "It is only in the last decade that the dominance of the medical and psychological models with their emphasis on deficits and individual disabilities has been challenged by alternative perspectives." (Cohen and Cohen, 1986, p.xii). In 1981 Hegarty commented that, "The definition of special needs pupils is misleading because their difficulties do not reside exclusively in the pupils themselves." (Hegarty et al., 1981, p.7). The "alternative perspectives" mentioned by Cohen and Cohen generally share this idea that handicap is not caused by individual disability alone but also by, "social interactional processes". (Bart in Cohen and Cohen, 1986, p.x).

This concept makes a clear distinction between disability and handicap. The idea, here, is that a disability may or may not be a handicap or that the degree of handicap may or may not be of significance, according to the interaction between numerous factors both individual and external to that individual. I think that it is important at this point to make clear that this concept of handicap does not seek to minimise the significance of any particular disability. As Hegarty comments, "This is not to say that the fact of sensory impairment or other factual information ... should be ignored. It is rather to stress that this is only one strand of information amongst many, and not necessarily the most important one." (Hegarty, 1987, p.34). Fish has made clear the difference between disability and handicap. "The
important distinction between disability and handicap ... was formalised by the World Health Organisation in the 1970s. 'Disability' was defined as a loss of function or activity by the individual as a result of impairment. ... The term 'handicap' was defined in terms of the effects of personality characteristics and social situations on a disabled individual. Thus individual differences in intellect, temperament and character, family circumstances, socioeconomic status, forms of intervention and provision, and administrative procedures, may all determine the extent to which a disability is handicapping for an individual". (Fish, 1985, p.8).

Warnock described this same concept in terms of "educational handicap". "Whether a disability ... constitutes an educational handicap for an individual child, and if so to what extent, will depend on a variety of factors. Schools differ, often widely, in outlook, expertise, resources, accommodation, organisation and physical and social surroundings, all of which can help to determine the degree to which the individual is educationally handicapped." (Special Educational Needs, 1978, p.37). The Fish Report has summed this up as, "the situational and relative concept of handicap". (ILEA, 1985). This newer perspective on handicap has reduced the influence of the medical model on special education over the last decade. On the other hand the medical perspective still retains some power. Barnes, writing in the 1990s, has summarised research in this area and concluded that, "The data shows that most of the educational provision for disabled children and students remains basically segregative and dominated by traditional medically influenced attitudes". (Barnes, 1991, p.28). This may be an overstatement but it is a useful reminder that the medical approach may not be consigned to history quite yet. More positively, Hegarty has commented that,

4.2 The Influence of Environmental Factors.

This "new dynamic" challenged the categorisation of individuals on the basis of common handicapping characteristics. It also looked closely at individuals and their particular circumstances and found that many could progress satisfactorily in their local educational environment. Hegarty noted that there was a, "growing realisation that some groups of children previously deemed to need special schooling, e.g. those with physical handicaps and those with visual impairments, have little need of it when their individual situation is looked at". (Hegarty, 1987, p.17). This view is supported by the NFB statement that, "It is necessary to forestall the idea that blind children are so severely handicapped as to exclude them from the integration process". (NFB, 1987, p.19). Some writers such as Standen have gone on to argue that visually impaired children who have other handicaps may well be suited integrated educational provision. She comments that there is no, "conclusive evidence that these children who suffer additional handicaps could not be helped in an integrated setting". (Standen, 1984, p.12). The new perspective also went on to examine the environment of individuals with disabilities to see whether particular environmental factors were likely to increase or decrease the degree of handicap. Fish has noted that, "Fostering the process of integration is a natural consequence of this ... concept of handicap." (Fish, 1985).

This critical focus on the possible handicapping effects of certain environments for individuals with disabilities led some to a re-evaluation of the traditional organisation of
special education. Once handicap was defined in terms of relativity and subject to a range of factors of which the disability was one and not necessarily the most important, then the rationale for the traditional pattern of special education by handicap categorised provision was weakened. Hegarty clearly expresses this point. "Apart from labelling children in inappropriate ways, these categories implied educational prescriptions. ... Handicapped pupils were considered to have certain educational needs in common, which moreover, were different from the educational needs of other children. This is patently untrue. There is no direct relationship between physical or sensory impairment and educational difficulties: pupils with similar impairment can have very different educational requirements. Since special schools were based on these categories, and indeed were described as schools for the blind ... or whatever, the move away from categories of handicap undermined the rationale for these schools." (Hegarty, 1987, p.14).

Not only was the rationale weakened but the possible handicapping effects of separate categorised provision were noted. CERI (Centre for Educational Research and Innovation) stated, "Exceptional treatment ... can so often insulate the disabled individual against the normal pressures and challenges of society, thereby sapping, not enhancing, independent living." (CERI, 1983, p.14). Cole has aptly described this isolation in the statement, "It sometimes appears that a thick oak door divides the residential special school from the outside world". (Cole, 1986, p.13). Whittaker has written that, "segregated provision alienates both students and special needs staff who work with them from the mainstream." (Whittaker, 1991, p.24). He goes on to state, "The isolation perpetrates a student deficiency model: that there is 'something wrong' with the students." (Loc. cit.). Cropp has argued that, "residential provision cuts the child off from his home, and
his community, and can lead to institutionalisation". (Cropp, 1985, p.53). Fish has mentioned the, "limiting effects of residential institutions" (Fish, 1985) and Low, in a more extreme statement, has described segregated special education in terms of, "a derogation from full humanity and citizenship". (Booth and Potts, 1983, p.33). Jamieson has used the expression, "handicapped sub-culture" to describe residential schools for visually impaired individuals which are orientated to the, "world of the blind". (Jamieson, 1977, p.105). Jamieson goes on to describe the, "world of the blind" in terms of, "the sense of separation and distance purported to exist between itself and the 'world of the sighted'. The implication is that each is exclusive of the other". Jamieson calls this metaphor both, "powerful and divisive". (Loc.cit.). The NFB and ABAPSTAS have written of "the need for 'desegregation'". (NFB/ABAPSTAS, 1973, p.2). Low has summed up much of the argument of these and other writers when he states, "Separate socialisation breeds attitudes of prejudice, ignorance and self-denigration, ... and ultimately leads to discrimination, dependency and the inability to cope." (Booth and Potts, 1983, p.33).

Where the individual has been categorised and placed in an educational setting on the basis of disability rather than any more positive aspect of their individuality, then there is the likelihood of these significant implications. Hegarty has called this, "a negative situation in living terms" (Hegarty et al., 1981) and written of a, "damaging isolation" where pupils were separated from, "the neighbourhood peer group" and, "in the case of residential schools, from family as well." (Hegarty, 1987, p.16). The importance of maintaining the child with special needs in the family home has been noted by many other writers. Vernon has written in terms of allowing, "the child to remain a member of the family unit". (Vernon, 1972). The
NFB and ABAPSTAS have argued that special school provision, "means that visually handicapped children are deprived to a very substantial extent of the possibility of growing up in their own families". (NFB/ABAPSTAS, 1973, p.5). In a more recent statement they have argued that, "Integrated schooling will mean that the majority of visually handicapped children can live at home with their own families and avoid the harmful separations in families that frequently occur now when children have to go away to school." (NFB/ABAPSTAS, 1989, p.2).

Other writers have pointed out that some families find it hard to cope with a child with special needs. Jamieson notes that, "not all parents are capable of looking after a child with severe visual impairment nor do they always want to." (Jamieson, 1977, p.103). This line of argument has been answered, to my mind effectively, by statements such as, "Family difficulties which may require a child to be provided for away from the parental home do not imply the need for residential care in a special school for the visually handicapped". (Moody, 1983, p.211). Clearly family difficulties can occur in any home. Agencies exist to deal with these matters and it would seem reasonable that they should treat individuals with special needs in the normal way. Jamieson provides a telling statement from a parent on this question of parental concern. "They like having their kids about, they even like having blind kids about". (Jamieson 1977, p.104).

The importance of maintaining the "family unit" obviously diminishes as the young person approaches post-secondary age. It is recognised that at this stage there can be advantages in college provision away from the home environment. Dawkins has commented in relation to visually impaired individuals that, "a young person may benefit from a period away from home at the F.E. stage." (Dawkins, 1989,
Traditionally this was provided by special colleges, such as, for example, Beaumont College, Lancaster, for physically impaired students or Queen Alexandra College, Birmingham, for visually impaired students. However, the majority of students would have moved to these colleges from the special schools in which they had spent a good deal (if not most) of their school career. There is the danger in this case that the disadvantages of segregated secondary provision could be reinforced by experiencing further education in a special setting.

The benefits of educating individuals with special needs (both pre- and post-secondary) together with the full range of their contemporaries have been mentioned by many. The NFB and ABAPSTAS have written of, "the opportunity to come to know and understand, and to learn to live and work with, a wide range of their unhandicapped peers". (NFB/ABAPSTAS, 1973, p.5). In a later statement they have gone on to also state that, "Sighted children can gain from contact with blind and visually handicapped children at work and play". (NFB/ABAPSTAS, 1989, p.1). Standen's discussion of the integration debate in the area of visual impairment has similarly concluded that, "over and above all, there is the inestimable value to both the blind child and his/her sighted counterparts of growing up and being educated together". (Standen, 1984, p.12). Low has commented in the same way that integration, "can do much to sweep away the barriers of ignorance and misunderstanding that keep the handicapped and the non-handicapped apart". (Booth and Potts, 1983, p.33). It is clear from the data collected by an RNIB survey published in 1992 that parents of visually impaired pupils in mainstream schools valued social integration highly (71% support) and saw it as the main factor in the placement decision for their children. (Walker et al, 1992, p.127).
Special school segregation leading to social isolation from contemporaries and, to some extent, family, could compound the handicapping effects that arose from categorisation by disability and promote what Hegarty has called, "handicap careers". "One slowly becomes ... out of phase with community and behaviour patterns." (Hegarty et al., 1981, p.78). In a similar vein, Adams speaks of, "a loss of contact, loss of knowledge of the 'normal' world and largely a lack of adjustment to the world". (Adams, 1986, p.90). Official reports have made similar observations about the advantages of individuals being educated in a mainstream environment. The Vernon Report of 1972 on the education of the visually impaired had made it clear that it viewed contact between visually impaired pupils and their contemporaries as of considerable importance. "We are deeply impressed by the argument that if visually handicapped children are to be fitted through education to live in the world with sighted people, the best way for them to acquire the necessary ability and confidence is to mix as freely as possible with sighted children during their schooldays. In order to get to know sighted children and feel at home with them, a visually handicapped child needs to be in the same school as they are". (The Education of the Visually Handicapped, 1972, para. 5.30). The importance of contact with the whole range of contemporaries was implied by the Warnock Report when categorisation was criticised for, "Perpetuating the sharp distinction between two groups - the handicapped and the non-handicapped." (Special Educational Needs, 1978). Warnock specifically included visually impaired individuals in the general group that could benefit from the breaking down of these "sharp distinctions". The Report states, "We believe that our views on integration ... are applicable to both the blind and partially sighted". (ibid., p.211). The Fish Report commented on the same general point. "To place individuals
into separate schools and institutions is to isolate them from natural interactions with their contemporaries." (ILEA 1985, p.4). The Fish Report clearly recognised that separate provision might be necessary in some circumstances but stated that, "The handicapping effects of disabilities should not be unnecessarily increased by separate provision unless no other course of action is practical." (ibid.).

4.3 The Comprehensive Movement.

In some ways the points outlined above for greater integration of individuals with special needs parallel arguments for the extension of comprehensive education to include such individuals. The opening part of this chapter covered definitions of comprehensive education that clearly recognised the logic of expanding the comprehensive principle in this way. Interestingly, in the field of sensory impairment, generally, there has been some resistance to this. In the early 1980s Swann noted that, "Selective schools are a major feature of the education of the deaf in the U.K.". (Swann and Briggs, 1982, p.12). Moody has described a similar situation in the area of visual impairment when discussing the dominant position of, "the grammar schools at Worcester and Chorleywood". (Moody, 1983, p.210). (These schools have since been amalgamated). Some have seen the existence of such schools as a barrier to educational developments in this area. The NFB and ABAPSTAS have argued that the existence of the grammar school sector is a, "sign of the general backwardness of educational provision for the visually handicapped". (NFB/ABAPSTAS, 1973, p.31). These organisations refute the assumption that, "children can be satisfactorily categorised for educational purposes as 'needing an academic course' or 'suitable for a non-academic course' by a once and for all decision, seldom requiring revision" and go on to comment
that in education, "this orthodoxy no longer prevails". (ibid., p.72). Moody's comments echo this statement. "eleven plus selection is probably even more damaging for the visually handicapped than in the ordinary school system where, for good reasons, it has been abandoned". (Moody, 1983, p.210). Milligan also noted that, "in the special school sector there is still a vigorous selection of pupils at eleven or twelve plus into 'grammar school material' and 'the rest'". (Milligan, 1978). Low has advocated greater integration by the, "simple extension of the comprehensive principle in education to the visually handicapped". (Low, 1983, p.59). Ten years before, the NFB and ABAPSTAS stated, "Integrated schooling affords by far the best basis for ending eleven plus selection ... for visually handicapped children and for making available to them comprehensive secondary schooling". (NFB/ABAPSTAS, 1973, p.62).

The comprehensive movement has clearly been seen as a helpful and often encouraging development for those supporting greater integration of special education provision. At the same time, it is important to note that this issue is a complicated one and that counter-trends certainly exist. These are addressed in Section 5.

4.4 Curriculum Considerations.

The general and fundamental criticisms of the traditional organisation of special education based on categories of disability flowed from the new, "situational and relative" (Fish, 1985) concept of handicap and educational developments such as comprehensivisation. But there were also other critical observations, perhaps less theoretical, but more practical, to the traditional pattern. One area of concern that was commented on was the curriculum range that was found in special education.
The question of full access to the whole range of the curriculum has been cited by many writers as a matter of some concern for special education. Clearly, if the full range of the curriculum is not made available to individuals in the special education sector, then it is likely that this will further increase their "educational handicap". One difficulty of ensuring that the whole range of the curriculum is made available is that it requires a school of sufficient size to generate enough staff to cover subject specialisms.

Traditionally special schools and colleges were and are relatively small and indeed some would argue that this was an advantage, but inevitably the consequence was some loss of breadth to the curriculum. Hegarty, summarising some of the criticisms of special schools, stated, "Numerous charges were levelled at the special school. It offered a narrow curriculum and too little specialist input from subject areas." (Hegarty, 1987, p.15). The NFB and ABAPSTAS have argued that the, "special character and small size of the segregated schools", entailed, "great restrictions in range of staff and curriculum". (NFB/ABAPSTAS, 1973, p.9). Low has commented that, "by bringing visually handicapped education much more into the mainstream, visually handicapped children could benefit from the greater range and diversity of subjects and staff available". (Booth and Potts, 1983, p.34). Hegarty goes on to argue that, "It is precisely the difficulty of providing adequate access that has so often been used to justify segregated education". (Hegarty, 1987, p.187). Clearly, if access to the full range of the curriculum has been deemed to be impossible in the mainstream, it would weaken the case for segregated education to be justified on the grounds of giving full access to a limited range of the curriculum.
One consequence of this tendency to a narrower curriculum provision was the stereotyping of certain types of courses as being particularly suited to certain types of disability. This stereotyping of courses for individuals with particular disabilities has also been described as "curriculum distancing". (Clunies Ross and Wilmhurst, 1983). This is that any preconceived ideas about certain areas of the curriculum being particularly suited to individuals with certain disabilities inevitably distances those individuals from the full mainstream curriculum. This can obviously restrict educational choice and can seriously reduce the, "equality of opportunity and the benefits that this affords". (Barton and Tomlinson in Cohen and Cohen, 1986).

These difficulties of a restricted curriculum tend to diminish as the size of the school increases and certainly in the larger mainstream schools the specialist areas of the curriculum are more easily staffed. The same is true of colleges providing post-secondary courses. CERI, in relation to this point stated that, "Integrative arrangements are seen to offer social advantages and ... improved access to a wider range of academic courses." (CERI, 1983, p.24). Bradley and Hegarty argued in a similar way that, "For those with physical and sensory disabilities all further education courses are potentially open". (Bradley and Hegarty, 1981).

The 1988 Education Reform Act and the regulations concerning the National Curriculum are expected to minimise some of the disadvantages listed above in the primary and secondary sectors. The Act made clear that individuals with special needs were not exempt from following the National Curriculum. Although it is true that individuals can be subject to disapplication from the terms of the National Curriculum, such a procedure had to be fully justified and it is recognised that the process could normally only be a temporary one, "for up to six months in the first instance".

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(Circular 15/89, 1989). It may well be that some of the criticism of narrower curriculum in special education will need to be revised in due course.

A point that is sometimes related to comments on the special sector's curriculum is that institutions operating outside the mainstream can tend to lose touch with developments in the mainstream. Cropp has noted that, "A specialist may possibly lack familiarity with mainstream curricula and approaches". (Cropp, 1985, p.51). In a similar way Barnes has commented that, the lack of curricula expertise among teachers is a key issue in special education". (Barnes, 1991, p. 45). This is often linked to the idea that some of special schools, "come to expect lower standards". (Jamieson et al., 1977). This point is clearly expressed by the NFB and ABAPSTAS when they write, "Many schools for the blind and partially sighted ... are now pervaded by a debilitating undemanding and unstimulating atmosphere where the relentlessly easy going pace, apparently so genial and humane, is ... all too clearly expressive of the devastating judgment - 'nothing much can be expected from these children'". (NFB/ABAPSTAS, 1973, p.7).

The possible stereotyping of the curriculum content can lead on to a restricted view of what areas of employment are open to individuals with special needs. Critics of segregated institutions have argued that some professionals in the field had, "internalised the notion of special education for special jobs". (Jamieson, 1977). Barnes has argued that, "by producing socially and educationally disabled individuals, the 'special' education system perpetuates and legitimises discriminatory practices in all other areas of social life, including employment". (Barnes, 1991, p.61). CERI notes an example of this from their international studies. "It has been the practice in a number of countries ... for a varied range of occupations that become
associated with particular disabilities, for example massage and acupuncture for the blind in Japan." (CERI, 1983, p.34). Jamieson has made a related observation in this country. "A good many blind pupils expressed ... dissatisfaction: there was some feeling of being pressurised into particular channels, e.g. telephony and physiotherapy." (Jamieson, 1977, p.116). There is clearly a danger of this happening where long established courses have a record of placing visually impaired people in work when many find it difficult to obtain employment at all. For example, piano tuning courses at the Royal National College and telephony training at the RNIB Vocational College would seem to fall into this category. Milligan has painted this danger more darkly. "For ... the majority of blind children, all that their 'special' education and training leads to in the end is one of a tiny number of exceptionally low-paid, low status, dead end jobs ... if they are lucky enough to avoid permanent unemployment". (Milligan, 1978). This view echoes the statement by the NFB and ABAPSTAS that special education for visually impaired people, "leads to, especially for the blind, confinement within a tiny group of low-paid, low status, insecure and above all 'blind alley' jobs". (NFB/ABAPSTAS, 1973, p.7). These views seem to give an extra dimension to Hegarty's phrase, "handicap careers".

A more positive view of this tendency to stereotype visually impaired individuals into restricted employment opportunities is provided by the expanding computer industry. Technological advances have made it possible for visually impaired people to work effectively in such careers as computer programming. This is regarded as high status employment which enjoys relatively high financial rewards. Nonetheless, a tendency to see visually impaired people as, "good at programming" is still a restrictive one and is similarly limiting in the same way as the more traditional stereotyped employment areas.
Some would not share these general and specific observations on the limitations of the traditional pattern of special education provision. Hegarty, a firm supporter of integration, concedes that, "Integration is not a self evident affair, nor does it command universal support". (Hegarty, 1987, p.47). The next part of this thesis looks at factors that seem to be working against the general trend towards greater integration of special education provision.
5. Counter-arguments.

5.1 The Need for Specialist Support.

One common criticism of moves towards integration is that it is impossible to provide the best learning environment for individuals with disabilities in the mainstream. Often this belief is allied to an awareness that it involves some social cost but that the cost is worth paying. Cohen and Cohen have commented on this point that some, "see the social objectives of integration as incompatible with providing high quality special education for children with disabilities or significant difficulties". (Cohen and Cohen, 1986, p.46). Special colleges and schools are often regarded as possessing the expertise and experience that the mainstream simply does not have. Jamieson summarises some of the most common questions that are raised about the ability of the ordinary school to cope in the area of visual impairment. "Can they marshal enough support, in resources and expertise? Can they understand sufficiently, and cater for, the visual and other problems of the blind and partially sighted child?". (Jamieson et al., 1977, p.110). Barton and Tomlinson have written that some, "see the degree of differentiation required of the ordinary school as impossible to achieve". (Cohen and Cohen, 1986, p.46). Chapman and Stone have argued that, "Good practice demands that it is not only the pupil's needs that should be recorded, it must also be ensured that they can be realistically met." (Chapman and Stone, 1988, p.186). Some opponents of moves towards increased integration would claim that this basic requirement can not be met in the mainstream.

Some writers have referred to the specialist knowledge and qualifications of teachers in special institutions which
would not be brought to bear in the ordinary school. Jamieson describes this expertise in the field of visual impairment. "The teacher learns about the various medical conditions, the ways in which sight is affected, and about teaching developmental consequences of a child's experience when restricted by limited vision". (Jamieson et al., 1977, p.113). Special subjects such as Braille, Mobility and instruction in the use of specialised technology are also considered out of the range of the ordinary school's curriculum. In the same way specialised mediums such as Braille, tape, large print and raised diagrams are thought to be beyond the capability of the ordinary school. This was to some extent borne out by Tobin and Colborne Brown's survey of about one thousand integrated visually impaired pupils. The survey concluded that, "Lack of specialist teaching and material, and insufficient attention, were all cause for complaint from parents." (Colborne Brown and Tobin, 1983, p.173).

In this context it seems worth mentioning that some writers have questioned whether special schools really do possess the expertise that is claimed for them. Hegarty has commented that, "Not all teachers in special schools are expert in special needs or possess the requisite teaching and programme planning skills." (Hegarty, 1987, p.58). Barnes has noted that, "It is frequently stated that staff in special schools are better equipped to educate pupils with SEN. There is little evidence to support this view". (Barnes, 1991, p.44). Rea and Corbett have argued in a slightly different way that special needs specialists have had an interest in developing a mystique around their skills and knowledge in order to gain status. They argue that, "We need a move towards a shared ownership of commitment to students. This necessitates the devolution of the specialist mystique and a sharing of teaching approaches." (Rea and Corbett, 1992, p.25).
5.2 Selective Education.

Fish has noted that, "Some parents actively sought highly specialist environments for their children, for example schools for the visually and hearing impaired with academic reputations. For these parents 'segregation was a way to later integration'". (ILEA, 1985, p.144). Jamieson also describes this position advocated by many who support the retention of special schools. "The visually impaired child is best prepared, they say, by learning certain specialist techniques and skills - in what must necessarily be a somewhat artificial and modified environment - before 'coming out into the real world'". (Jamieson et al., 1977, p.106). The RNIB argued in a similar way that, "the gifted blind child needs more specialist teaching, specialist apparatus and specialist amenities if he is to have equal opportunities with the gifted sighted child". (The Education of the Visually Handicapped Child, 1972). The RNIB later argued that the existence of high academic services was in itself a valid reason for continued educational selection. "The high academic programmes at the two selective schools, their closely knit supporting services, are, in our view, important justifications for the continued existence of a system of selective education for the visually handicapped". (RNIB, 1975, p.5).

There is clearly a cross-over here between the case for mainstream as against segregated special educational provision and the case for selective as against comprehensive schooling. The debate can be distorted into one of academic selection versus special needs integration. Arguments for maintaining academic selectivity can be hidden behind a discussion of the practical difficulties of integration. Similarly, arguments for extending the range for comprehensive education can be hidden behind a discussion of the benefits of peer group interaction. It is
necessary to tease these two separate debates apart in order to clarify the arguments involved. Discussion of the theme of integrating special educational provision is the major thrust of this paper and to that extent discussion of the selectivity/comprehensive dimension is of secondary significance. It is possible that the failure to clarify these separate issues can, to some extent, confuse the general discussion in this area.

For example, the head of a special school for visually impaired pupils has argued that comprehensive education for "non-academic" pupils would be a good thing but not for "academically bright" pupils. He states, "We are accused of a, 'lack of regard for the educational needs' of the less able children. Many people connected with special education favour the establishment of comprehensive schools. ... If this solution were eventually adopted it would please quite a lot of us". (Manthorp, 1983, p.266). At some point there is a tendency for arguments for and against greater integration of special educational provision to become merged into arguments about selective education. This helps to explain the level of controversy that sometimes occurs. Those in favour of a mainstream approach have seen their position described as the, "ill-informed and emotive arguments of the advocates of integrated education". (Avis, 1975, p.20). The Chairman of the NFB, an advocate of integration, was addressed in the following terms. "If ... he merely wishes, on doctrinaire grounds, to undermine the work of some fine special schools before there is anything remotely as good to put in their place, then he must expect to be opposed by anyone who cares more about children than about dogma". (Manthorp, 1983, p.267). These statements provide an indication of the heated nature and the lack of clarity of the controversy when the selective education and integration debates merge. There is obviously an overlap between the two debates but it is not always clear where the
between the two debates but it is not always clear where the dividing line is, and this can lead to difficulties.

Involved in this area of overlap between integration and selection is the idea that positive discrimination in educational provision can help overcome the difficulties experienced by individuals with disabilities. Hegarty has stated, "The justification of special schooling was ... that it offered a superior education to some children and ensured that they were given the best possible start in life". (Hegarty, 1987, p.15). The Fish Report has spoken of, "a complex balance between positive discrimination and the ordinary educational environment." (ILEA, 1985, p.143). The advocates of positive discrimination in the form of selective education have certainly exercised an influence in the debate on extending integrated provision. This advocacy has often come from the voluntary sector of special education. This is further examined in Section 6.

5.3 Mainstream Inhibition.

Some writers have questioned the claimed advantages of being educated among contemporary peer groups. Jamieson has noted that an individual with special educational needs in the ordinary school might, "face at least some ignorant and insensitive reactions from other children and occasionally from staff as well". (Jamieson et al., 1977, p.128). Against this, there was the opportunity of a "supportive milieu" in the special school where the pupils could experience, "understanding, encouragement, practical assistance, technical and medical support". (ibid., p.116). Many have seen staff reactions as a most important element in successful integration of pupils with special needs. Jamieson has commented that, "Much would depend on the goodwill and involvement of individual teacher". (ibid.,
Clearly if mainstream staff are unsympathetic to the integration of individuals with special educational needs, there would be major difficulties with such programmes. Chapman and Stone have noted, "Not all integrated placements have been proved to be educationally successful and not all parents make integrated school placement their first choice". (Chapman and Stone, 1988, p.196). Another argument for the retention of special schools that has been made is that they, "take the 'failures' from integrated provision". (Jamieson et al., 1977).

5.4 Opposition to Funding Reduction.

Integration has also been criticised by some who believe they discern unworthy motives on the part of administrators and policy-makers. Put simply, "Many parents and teachers are suspicious about official enthusiasm for integration, sometimes claiming that it conceals an intention of cutting expenditure and providing special education on the cheap". (ibid.). Barnes has argued in a similar way that, "the rhetoric of integration could represent nothing more than a politically convenient ploy to reduce public expenditure on an already severely disadvantaged section of the community". (Barnes, 1991, p.52). Others, less suspicious, still have reservations about whether integration can be effectively carried out given its resource implications. Barton and Tomlinson have noted that the policies for integration are, "constrained by competition over priorities and competition over scarce resources". (Cohen and Cohen, 1986, p.50). The issue of resource implications of integration policies is further addressed later in this thesis when the discussion moves to consider legislation in this area.

It is clear that despite moves towards integration in education there are, "Many people with long experience in
special education - parents and pupils as well as professionals - remain strongly opposed to it". (Hegarty, 1987, p.47). In the field of visual impairment, Jamieson has commented in a similar way, "There are powerful arguments on both sides. ... It is clear that, overall, the move to integrate is seen as a threat to the existing status quo - a questioning of traditional systems and structures; ... From a different standpoint, the capability of the ordinary school to assume the responsibility for special provision is seriously questioned". (Jamieson et al., 1977, p.213). Those opposed to integrated educational provision and those advocating it often, paradoxically, seem to share a belief in the importance of successful integration but differ at what point in an individual's development this should be achieved. Jamieson has summarised these positions as a discussion about, "points of entry into the sighted world". One position advocates entry at a stage of, "sufficient independence and initiative to fend for themselves". The other position argues that integrated individuals have, "no need to negotiate an entry". (ibid., p.106). Jamieson describes this as, "one of the most basic of educational dilemmas, almost a conundrum." (Loc. cit.).

The voluntary sector has played a central part in these discussions and often exerted considerable influence in this area. The next section of this thesis looks at this aspect of the integration debate.
6. The Role of the Voluntary Sector.

6.1 General Considerations.

The voluntary sector has had a significant impact on the provision of special education in this country and has had an important influence on the progress of integration. Many institutions in the voluntary sector have considerable histories going back well into the nineteenth century when, to a considerable extent, their work was regarded as administering charity. The charitable status of these institutions has been seen by some observers as a cause of difficulty today. Fish has commented that, "The institutionalisation of charity results in negative attitudes such as a preoccupation with maintaining prestigious facilities and an implication that those for whom they are providing should show a seemly sense of gratitude and dependence". (Fish, 1985, p.6). McGinty and Fish later noted that, "Grateful dependence is easier to manage." (McGinty and Fish, 1992, p.7).

Jamieson has referred to an important point about public perceptions of these institutions. This is to do with the conflict between the need to secure adequate funding from the public and the need to secure a positive self image for individuals with impairments. "There are various images of blindness projected for fund raising ... the images are ... those of helplessness and dependence". (Jamieson et al., 1977, p.129). A fairly recent innovation in fundraising has been the televised event. This development has been criticised by some for its negative influence on the very people it is supposed to assist. "The response of the competitive society to disability and special need is often characterised by the 'telethon' charity. This emotive form of giving makes the donor feel good. While those with
disabilities appreciate help they do not wish to be diminished objects of charity. Equal opportunity and entitlement do not stem from morally superior giving." (McGinty and Fish, 1992, p.23). Oliver has also criticised the use of, "charitable images of disability on television." (Oliver, 1992, p.5).

The use of dependent imagery may be emphasised further when a range of charities are competing for a finite or reducing amount of charitable contributions. McGinty and Fish have commented that, "Organisations compete with each other for recognition, status and money, often by diminishing the common needs and exaggerating the special requirements of individuals with particular kinds of disability". (McGinty and Fish, 1992, p.10). Oliver has identified dissatisfactions like these as an important factor in the development of self advocacy and the growth of disability groups speaking for themselves. "Disabled people", he argues, "have been inadequately supported by voluntary organisations and single issue pressure groups purporting to act on their behalf. This failure has led disabled people to form their own representative organisations." (Oliver, 1992, p.4).

In addition to issues of dependency and gratitude, Fish has also written of institutions' "sometimes stultifying bureaucracy" which has been resistant to change. (Fish, 1985). Historically, these institutions in the field of special education saw, as one of their main concerns, the maintenance of special schools for their particular client group. This close focus on the particular impairment can have disadvantages. McGinty and Fish have argued that while, "Specialist knowledge and skills are vital for the education and support of people with a particular disability, individuals are not always best served by a large number of separate facilities and services based
exclusively on narrowly defined categories of disability". (McGinty and Fish, 1992, p.10). This point has been made more forcefully by the NFB when they state that, "Charities divide Disabled People into medical groups, which threaten the unity needed between Disabled People in their struggle for civil rights." (Viewpoint, 1991, p.49). Chapman and Stone have also noted the resistance effect of some voluntary societies. They have commented that, "the strong historical traditions" and, "voluntary body funding" of many special schools results in a, "strong case for the status quo". (Chapman and Stone, 1988, p.197). Ten years earlier Warnock made much the same point by implication when she noted that integration, "holds a challenge for those voluntary societies whose efforts have been centred on special schools and should lead to a reappraisal of the work of such organisations in the field of education". (Special Educational Needs, 1978, p.312). Clearly Warnock regarded the work of some voluntary societies as potentially restrictive if such "reappraisal" did not take place.

6.2 The Voluntary Society in the Field of Visual Impairment.

The role of the voluntary sector in the field of visual impairment perhaps provides some insight, not just into educational developments concerning individuals with visual difficulties, but also in the wider context of special education. Low has noted that developments with, "children with ... visual handicap ... provided a microcosm of many of the opportunities and difficulties associated with the integration of handicapped children generally". (Booth and Potts, 1983, p.28). In this field the RNIB has held a dominant place and has attracted a good deal of comment about its position on the question of integration. Low has called the institution, "the official, comparatively self
contained, 'blind education system' where ... so long as special schools continue ... there will be places to be filled and people with an interest in filling them."

(ibid., p.35). He goes on to argue that, "we can soon end up reaching the point where the children are meeting the needs of the institution instead of the other way around". (ibid. p.38). Wells has argued in a similar way that individuals with visual impairment are not always the first priority of the RNIB. "Special education in this country is ... a deeply entrenched vested interest. ... It is hardly surprising that such a vested interest should react as it has done to proposals, which if accepted, would radically alter the role of the special education sector". (Wells, 1983, p.154). These views coincide with the statement by McGinty and Fish that, "it can be argued that there is a 'disability industry' with a vested interest in the continued dependence of those who are disabled". (McGinty and Fish, 1992, p.7).

Within the National Federation of the Blind there has surfaced a clear indication of opposition to the continuation of these negative influences. A "Campaign to Stop Patronage" was started at the 1991 Annual Delegate Conference. Amongst the aims of the campaign the NFB stated that, "Charities portray Disabled People as passive, tragic, people who are yearning to become non-disabled. It implants fear of disability into non-disabled people. It portrays us, often, as not able to run our own lives, not able to make our own choices. This is a total misrepresentation of our lives and aspirations, insulting in the extreme. It is also politically dangerous in that it denies credibility to our own demands, and dehumanises Disabled People."

(Viewpoint, 1991, p.49). The campaign also criticised charitable bodies on the grounds that they, "mislead the public into thinking something is being done, when the truth is it is not in their interests to promote the rights of
Disabled People. Charities see Disabled People as the problem, not the barriers in society that we face. This diverts the attention and resources from the real solutions". (Loc. cit.). The campaign went on to state, "We are opposed to Charities who support segregated provision in education, housing and all aspects of our lives." (Loc. cit.).

6.3 The Historical Context.

The early history of the RNIB has some bearing on current issues. It seems useful to briefly examine events and developments from the nineteenth century to provide a context for more recent trends. The movement towards integration in the field of visual impairment has a long history. In 1875 Moon could state quite clearly that, "The instruction of blind children in ordinary schools is by no means a new idea". (Moon, 1875, p.21). In that same year Barnhill published the results of his work concerned with the successful integration of blind children into ordinary classes in Scotland. He reported that, "After two years trial of teaching the blind with the sighted, they were examined side by side, the blind maintaining a most satisfactory position". (Barnhill, 1875, p.v). Interestingly, both Moon and Barnhill refer to developments in Edinburgh that proceeded their own work by many decades. Barnhill notes that, "An extract from the Annual Report of the Edinburgh Institution for the Blind with reference to the education of the blind in sighted schools ... recorded that forty years ago the Directors sent a number of blind boys to the Sessional School, where they made admirable and satisfactory progress". (ibid., p.vi). Moon makes a similar reference in his 1875 work.
Schemes for integration at this time were based on the desire to provide an education for visually impaired children who would receive none at all unless they went to the local mainstream school. By the late nineteenth century integrated provision was becoming more widespread. Jamieson noted in 1977 that, "more blind children were in ordinary schools in 1889 that there are now". (Jamieson et al., 1977). In 1885 the Royal Commission on the Blind, Deaf and Dumb was set up. One of its concerns was to examine the state of integrated provision. Its report commented that, "The free intercourse with the seeing gives courage and self-reliance to the blind and healthy stimulus which enables them to compete more successfully with the seeing in after life than those who have been brought up altogether in blind institutions". (Report on the Blind, Deaf and Dumb, 1889). There are also examples from America of similar encouragement for integration. McIntire has recorded that in 1866 the Director of the New England Asylum for the Blind advocated integration as the preferred option and described residential schools in terms of, "unnatural, undesirable and liable to abuse. We should have as few of them as possible and those few kept as small as possible". (McIntire, 1985, p.161). Successful schemes for the integration of visually impaired pupils were reported in Chicago as early as 1900. (Bishop, 1986).

In the last quarter of the nineteenth century professionals in the field of education for the visually impaired were engaged in what has become known as the, "War of the Types". (Jamieson et al., 1977). The introduction of Braille as the favoured raised type due to its advantages in ease of use over other forms had some unseen consequences. The other forms, including Moon, could be accommodated in ordinary schools because they were based on standard lettering (in differing degrees) and could be read by teachers and other pupils reasonably easily. Braille made specialist teaching
necessary and Jamieson notes that, "Barnhill argued against Braille for this reason". (ibid.). In 1868 the British and Foreign Society for Improving the Embossed Literature of the Blind (now the RNIB) was founded and saw as one of its major roles the advocacy of Braille. This led it to establish and maintain residential special schools which is still one of its primary functions. The pattern of provision for visually impaired pupils changed to one of segregated rather than integrated education.

In many ways the debate about the integration of visually impaired individuals, today, echoes the arguments heard in the nineteenth century during the "War of the Types". Specialist instruction, then, meant a segregated education and, for most, the disadvantages of residential schooling. Against this, there was the advantage of better education using the improved medium of Braille and the consequent improvement in life chances. Jamieson has described the more recent experience of integrating visually impaired individuals as a, "rebirth of sorts". (Jamieson et al., 1977). This reference back to the nineteenth century is an interesting reminder that the current debate on the integration of visually impaired individuals, following on from the Vernon and Warnock Reports and the 1981 Education Act, is far from new.
6.4 Recent Developments.

From its establishment, then, the RNIB was closely associated with segregated educational provision rather than the experiments in integrated provision which were taking place at the same time. Clearly, this early history of a commitment to special schooling has had some influence on its position on the question of integrated special education provision in recent times. It is also clear that there has been some movement in its position over the last two decades. In its reaction to the Vernon Report (1972) the RNIB stated that, "The Institution accepts the principle that, wherever possible, a visually handicapped child should live at home. The Institute wonders how practical this would in fact prove". (RNIB, 1972, p.3). The RNIB also went on to comment, "At the same time, we feel that 'open education' has become a dangerous catch-phrase". (NFB/ABAPSTAS, 1973, p.47). This would seem evidence for a fairly negative approach to the prospect of extending integrated provision. A little more positive were the remarks of the Director General, Eric Boulter, that, "We also look forward to the forthcoming studies of the NFER into the integration of blind and partially sighted children". (RNIB, 1972, p.2). In the early 1970s it would seem reasonable to say that there was little enthusiasm for expanding the numbers of visually impaired individuals in the mainstream.

In 1975 the RNIB made its position on integration clear in its evidence to the Warnock Commission. There was perhaps some sign of movement in its approach to this question, but the change was perhaps more one of tone than content. The institution stated that, "A small number of visually handicapped children .. already benefit from being integrated into open education programmes and this is likely to extend. It is our belief that it will never be more than
a minority and the very special needs of the exceptionally able and the exceptionally handicapped will continue to be best met by ... special schools". (RNIB, 1975, p.2). This statement seems a good example of the merging of the special needs provision debate and the selective school debate mentioned earlier in this paper. Low has spoken of, "confusion and distortion" (Booth and Potts, 1983, p.40) in this regard.

Ten years later it was possible to see some clear movement in the position of the RNIB. In its response to the Fish Report (1985) it took a more positive stance towards integrated provision. In a statement which interestingly echoes that of 1972 it states, "We accepted the principle that, wherever possible, a visually handicapped child should live at home, with obvious implications for mainstream provision". (RNIB, 1986, p.1). The second part of this statement indicates the distance that the institution had moved since the 1970s. It went on to state, "We would reiterate our concern to see the development of integration projects for visually handicapped children within ordinary schools". (ibid., p.2). The overall position of the RNIB was now to see a continuum of provision for individuals with visual impairments. "A range of options - which make it possible to respond to the considerable complexity of need which is evident amongst the visually handicapped population". (Loc. cit.). In a reference to the American legislation the institution went on to state, "We are envisaging a continuum which would enable a child to be placed in the least restrictive environment, having regard to his or her needs". (Loc. cit.). Interestingly, at this time, the RNIB amalgamated their single sex grammar schools into one mixed grammar school at Worcester and, at the same time (as a counterweight?), set up an outreach resource unit to support integrated provision. It seems fair to point out, however, that the budget for the latter was very small
compared to that of the former. This is interesting in the light of the institution's comment to the Fish Report that, "integration is not a cheap option". (ibid.).

In the late 1980s there was more evidence of movement in the RNIB's position. In a significant development Colin Low, who had been a vociferous critic of RNIB educational policy, became the new Chair of the RNIB Education Committee and in 1988 stated, "A major feature of the RNIB's development programme, so far as education is concerned, is the development of support for integrated education". (Low, 1988, p.1). In 1989 the RNIB relocated its segregated further education Vocational College from London to Loughborough. This five million pound move was in order to promote the provision of integrated F.E. courses for visually impaired individuals. At the same time the college clearly intended to maintain its specialist segregated courses. The move followed on from a long term investigation on the best way to open up greater choices in training and employment for visually impaired people. Loughborough was selected because the F.E. college in the town was very receptive to the idea and was willing to enter into a legal association with the RNIB. It was also geographically central within the U.K. and has good communication links for a national service.

At about the same time the RNIB also established the National Education Centre (NEC) in London to promote the integration of visually impaired pupils in mainstream primary and secondary schools. The intention was to work towards establishing a series of regional centres to carry out this work. At the time of writing these have been established in the Midlands, Wales, the North and Scotland. It is also the case that the RNIB Student Support Service which traditionally worked with visually impaired students
in Higher Education has extended its brief, in recent years, to give greater cover to mainstream Further Education, too.

It is clearly possible to see movement in the position of the RNIB on the integration issue over the last two decades. It does seem to respond to developing trends in special education. At the same time it is possible to see the "institutional inertia" that many writers have commented on. The RNIB is still strongly committed to special schools for those "special categories" it defines as "academically able" and "severely and multiply impaired". At the same time it is committed to encouraging integration and providing services to this end. This continuum of provision approach to education for the visually impaired could be a strategy for maintaining special schools against pressure for increased integrated provision. On the other hand, it could just as well be a strong commitment to the "least restrictive environment" advocated in its response to the Fish Report.

This examination of the role of the voluntary sector in the development of special educational provision demonstrates many of the different themes that have arisen in this area. In the light of differing views on many of these themes, in general and particular aspects of the overall debate, many, both in the voluntary sector and outside it, looked to the field of research to provide some clear direction on what might constitute best practice. The next part of this thesis considers this evidence.
7. Integration and Research.

7.1 Sociological Research.

The relevant sociological research that is often referred to in this field is that which is concerned with such things as expectation effects, categorisation, stigma and stereotyping. These concepts seem in some ways to bear on the discussion on integration. It has been argued that segregated special education provision can disadvantage individuals because of the influence of these factors. Jamieson has noted, vis a vis the integration debate, that, "Questions about stigma, normality and the psychological impact of total school experiences form significant parts of the controversy". (Jamieson et al., 1977, p.103).

Expectation effects have been investigated in several studies. Teacher expectation effects were brought to prominence by the work of Rosenthal and Jacobson in America in 1965. They published a study entitled, "Pygmalion in the Classroom" which has been widely publicised and the subject of controversy. The study was based on the concept of experimenter effects first noted in 1924 in a sociological survey of the Hawthorne factory of the General Electric Company in America. The Hawthorne Effect, as it was called, was basically that workers' output increased whenever researchers showed an interest in their work, irrespective of changes in the working conditions that the researchers were investigating. In 1949 the American sociologist, Merton, published, "The Self-fulfilling Prophesy" which argued that, "something one expects to happen may happen only because it is expected to do so." (Tierney, 1982). In 1963 Rosenthal and Fode published their study, "The effect of experimenter bias on the performance of albino rats". This demonstrated that students who had been told that
certain rats were "bright" reported improved performance in maze tests over their "dull" counterparts. The rats were all from the same batch.

The 1965 study by Rosenthal and Jacobson was carried out at Oak School in America. The school's teachers were told that the results of a test administered to all pupils indicated that 20% of the pupils were academic "spurters". The children were, in fact, chosen at random. At the end of the school year the children were retested and the study stated that the "spurters" showed clear gains in I.Q. scores in comparison with the control group. This work has been subject to much criticism and attempts to replicate the findings have proved difficult. In 1968 Thorndike reexamined the data that Rosenthal and Jacobson used and stated that more pupils in the favoured group deteriorated than gained in performance. Thorndike found that, "The data was so untrustworthy that any conclusions had to be suspect". In 1971 Elashoff and Snow reviewed the "Pygmalion" study and stated, "Text and tables were seen as inconsistent, conclusions were over-dramatised, variables were misleadingly labelled and the findings were over-generalised". (Shipman, 1981). Despite these strong reservations, many writers still believe that Rosenthal and Jacobson had demonstrated an important achievement factor, even if they had over-stated the case. Thorndike, one of the leading critics, took this view. Tierney states, "As Thorndike himself admitted, the theory was and still is generally plausible." (Tierney, 1982). Perhaps the conclusion of Elashoff and Snow best demonstrates a balanced view. "There is a relation between expectation and performance, but it is limited in scope and requires more than superficial attempts to modify the way teachers treat children". (Shipman, 1981).
Cave and Madison have concluded their review of research in this area of special education by stating, "Though the evidence of the effects of teacher expectation has not gone entirely unchallenged, there seems a strong likelihood that deficit descriptions ... do diminish a teacher's expectations of what a child can achieve". (Cave and Madison, 1978, p.101). Martin has made a similar observation when he argues that categorisation by handicap can lead to "labelling" which may lead to a handicapping condition being, "aggravated by special education ... by setting in motion the dynamics of self-fulfilling prophesy". (Ibid., p.55). Colborne Brown and Tobin have written of the "stigma" of, "going away to (residential) school". (Colborne Brown and Tobin, 1983). There is also the possibility that such classification can be self-limiting for individuals. Cave and Madison note that there is a danger that, 'deficit generalisations can be internalised". (Cave and Madison, 1978). Jamieson has written in a similar way of, "internalising and taking for granted messages at and from school". (Jamieson et al., 1977). Stainback and Stainback have criticised the, "categorisation and subsequent stereotyping of students". (Stainback and Stainback, 1984). Cave and Madison have also noted in their review of the literature that, "by delineating discrete areas of handicap and labelling a child ... his education tends to be directed into limited channels". (Cave and Madison, 1978, p.55). This tendency to stereotype certain areas of the curriculum for particular types of disability has been mentioned before in this thesis. Applying a deficit description or a negative stereotype to an individual might well have some negative expectation effect. Saunders, referring to Rosenthal and Jacobson's work, commented that, "Stereotypes can create similar expectations". (Saunders, 1982).
Fraser has analysed the concept of handicap and argued that the factors that contribute to the handicapping of an individual can be summarised under three headings - medical, environmental and social psychological. These he has called "A", "B" and "C". The "A" factors are those concerned with the disability itself - the intellectual, sensory or physical difficulty. "B" factors relate to the aspects of the physical environment that can make life difficult for individuals with disabilities. "C" factors relate to those aspects of the social interaction produce the, "handicapped identity". (Hodgson et al., 1984). The Fish Report has commented in a similar vein that, "Individuals with disabilities or significant difficulties may be handicapped by their own attitude and by the attitudes of others." (ILEA, 1985, p.4). The traditional medical model "with its prevailing understanding of handicap in terms of defect" (Hodgson et al., 1984) would tend to increase the influence of Fraser's "C" factors.

Much of the sociological research work referred to above tends to be more readily associated with the area of special education which were known as "ESN" in this country and "retarded" in the United States. While much of the research was concentrated on individuals with disabilities of this kind, there were studies with similar conclusions about individuals with sensory impairment (Vernon, 1969; Jones, 1970; Northcott, 1971). It seems likely that, to some degree, these observations will cover individuals with disabilities, whatever their nature.
7.2 Educational Research.

While the above research from the social sciences can clarify some of the issues involved in this discussion some of the central questions posed by the protagonists remain without clear cut answers. Research in this area of special education has looked at such matters as the numbers of pupils and young people in segregated as against integrated provision; the rates of academic progress of those in special schools and that of similar pupils and young people in integrated settings; the social and emotional development of individuals in the two environments; and differences in the costs associated with the two forms of organisation.

There is some lack of clarity even on the question of whether or not the trend towards integration is a statistical reality. Studies on the actual numbers of individuals who are in segregated education do not seem to tie in with some of the general trends and developments outlined in this chapter. Hegarty's study (1981) showed that the number of segregated pupils and young people was growing rather than decreasing. An analysis of the data indicated that while integration of individuals with physical and sensory disabilities was advancing, the segregation of groups such as individuals with emotional and behavioral difficulties, was increasing. Hegarty was very cautious about the findings and noted that demographic changes would cause increased numbers in special schools in the late 1970s even if the trend was towards greater integration. He noted, too, what he termed, "the inertial factors" which he described as, "tradition, professional resistance, bureaucratic delay and established routines", which can impose, "an inertia that belies the real state of affairs". (Hegarty, 1981, p.43). Valmalette has commented in a similar way on the, "L'inertie des structures
administratives" (Valmalette, 1979) and Cole has also written of the, "natural inertia of people in the present system". (Cole, 1986).

Hegarty also pointed out regional differences which indicated that integration was clearly progressing in some areas but not others. Colborne Brown and Tobin also noted this as a feature of their 1983 study in the area of visual impairment and commented on, "The enormous difference in attitude and effective response ... in a developing policy of integration". (Colborne Brown and Tobin, 1983, p.169). A study by Swann (1985) showed that the trends outlined by Hegarty had continued. In terms of numbers of individuals in special schools, there was no overall movement towards integration. Swann noted that in 1985 the numbers of secondary aged pupils in segregated schooling increased after an initial fall back in the early 1980s. As Swann later said, "Not much sign of progress towards integration, here." (Swann, 1988, p.102). Swann also commented on the regional variations that Hegarty and others had highlighted. He showed that between, "1982 to 1987 - 66 LEAs reduced their level of segregation", but in the same period, "in 30 LEAs the level of segregation increased". (Loc. cit.). Barnes commented in the light of these variations that, "It has been hard to discern anything that could be termed a national integration policy since 1981". (Barnes, 1991, p.39). Swann has noted other variations. He has recognised the trend towards fewer special school placements for individuals with physical and sensory impairments while at the same time noting that those with emotional and behavioral difficulties were experiencing a tendency to greater segregation. He clearly stated on this point that, "there is evidence of a national trend towards the integration of children with sensory disabilities". (Swann, 1985, p.14). Swann was not convinced that the reduced inflow into segregated provision for the former was
necessarily attributable to changes in educational policy and practices. He commented that other factors such as declining prevalence rates, technological and medical developments and ascertainment procedures could have an important influence. He concluded that, "It is impossible to disentangle the relative contribution of these four factors." (ibid., p.11). Barnes has added another factor to this list. He has argued that falling rolls can have an effect on the numbers of pupils with special needs in the mainstream. Barnes states, "Disabled children are marginal members of school communities. When mainstream school places are in short supply, segregation becomes the order of the day. When registers are empty, schools are less reluctant to exclude pupils". (Barnes, 1991, p.40). It seems clear that there are a range of factors influencing placements in mainstream and special schools and that changes in educational policy alone do not explain this fully.

Figures produced by the DES in 1990 (Educational Statistics: Schools, 1990) do indicate some movement towards mainstream provision. The percentage of children in special schools reached a peak in 1983 at 1.51% of the overall school population. Since 1983 there have been consistent annual reductions to 1.35% in 1989, the last year for which data has been made available at present. Overall, it seems that the data at present does indicate a slight trend towards integration and that this may be particularly true for individuals with physical and sensory impairments.

A question which has been even more difficult to answer is, "Which form of organisation delivers the best rate of academic progress?" Research findings give no clear indication. There are numerous studies that have taken up this issue but their findings have often been contradictory and their methodologies often criticised. For example,
Kellmer-Pringle concluded (1974) that, "institutional environments" have a generally unfavourable effect on individual "growth and development". (Cave and Madison, 1978, p.121). In the same year Tizard et al., (1974), "found no evidence of institutional retardation". (Loc. cit). The methodological weaknesses that have been noted by several writers concern the small scale of most studies and the failure to ensure that the control groups involved in comparison studies were in fact similar in important characteristics. Hegarty has commented that, "the studies conventionally match groups in terms of age, sex and I.Q. - and little or nothing else". (Hegarty, 1987, p.52).

Clearly factors like socioeconomic status, family background and prior educational experiences will affect educational performance. Cave and Madison noted that, "For a number of reasons, such as failure to control important variables and other methodological inadequacies, results are inconclusive and contradictory". (Cave and Madison, 1978, p.127). A further problem with some of the evidence is that much of the research was conducted in the USA and may not be fully applicable to the situation in the U.K. Cave and Madison caution against a too literal use of studies conducted in America, "where conditions are in many ways unlike those in this country". (Loc. cit.). Bradley and Hegarty issue a similar word of caution that, "many of the findings from other countries are culturally specific". (Bradley and Hegarty, 1981).

An exception to much of this general criticism is the work of Goldstein et al. (1965) published in the USA which found no significant difference between special school and regular classes. Cave and Madison commented that, "The study of Goldstein et al. gives no support to the hypothesis that special school children show greater intellectual gains than those in regular classes". Equally, the evidence fails to demonstrate that regular class placement is in this respect
superior to special school placement. They go on to note that, "later studies... provide no convincing evidence of the general superiority of any particular form of administrative arrangement". (Cave and Madison, 1978, p.94).

Research evidence on this matter in the field of visual impairment is open to the same criticism of contradictory findings and weak methodology as those described above. For example, in 1968 Magleby and Farley found that the achievement of segregated visually impaired pupils was higher than that of integrated pupils. (The Education of the Visually Handicapped, 1972). In 1970 McGuiness reported integrated blind children were, "found not to be inferior to those in special schools" when tested. (ibid.). Hegarty concluded that studies in this area were also, "comparative in nature and inconclusive". (Hegarty et al., 1981). While it may be possible to assess whether a particular form of educational placement will provide the best setting for academic progress for any particular individual, it remains very difficult to reach firm conclusions of a general nature. Hegarty concludes that, "If the goal is to maximise pupil learning, the research evidence does not arbitrate for or against integration". (Hegarty, 1987, p.51). Studies specifically in the field of visual impairment have to contend with all the difficulties outlined above and have the additional problem of definition of visual status. Bishop has commented that, "Blindness definitions range from total absence of vision to legal blindness and much research on visual handicapped students fails to define the degree of visual impairment in the sample". (Bishop, 1986, p.939). In her review of the research in this field Bishop noted that, "Several studies have evaluated the merits of different educational settings but have defined their visual handicapped samples in non-comparable terms". (Loc. cit.). Another difficulty has been highlighted by Colborne Brown.
and Tobin. Their research has shown that significant numbers of visually impaired individuals have been left out of the statistics on the education of the visually impaired because they were multiply handicapped. They were, "being educated outside the officially sponsored blind educational system". (Booth and Potts, 1983, p.31). Jamieson, reviewing research findings in this area also noted these difficulties and added a further note of caution about generalising from the evidence. This was that the wide variety of integration schemes and the wide range of approaches to be found in special schools made generalisation very difficult.

Research studies which have tried to access the effectiveness of different educational settings in promoting social and emotional development have met the same difficulties outlined above with respect to methodological problems. In addition, they have had to deal with the problem of defining and measuring, "social and emotional development". The same lack of generalisation has resulted, here, too. Hegarty's conclusion on reviewing numerous studies is as follows. "What emerges? ... Unfortunately, the research evidence is no more specific than it is in the case of academic achievement." (Hegarty, 1987, p.54). A similar pattern emerges in the area of visual impairment. Havill (1970) found that integrated pupils had greater difficulties with social adjustment. Schindele (1974) found that there were no significant differences in social adjustment between the pupils in integrated settings and those in special schools. Lukoff and Whiteman (1970) report visually impaired individuals in special schools as having greater difficulties with social adjustment. Hegarty's conclusion to this research in general applies as well to the work done specifically in the area of visual impairment.
The question of what are the different overall costs of integrated as against segregated special educational provision have been investigated. The suspicion that integrated education might be seen as a, "cheap option" makes this an interesting area to probe. Clearly, the best use of scarce resources is an important consideration in evaluating different forms of educational organisation. Evidence for the financial efficiency of one form of organisation as against the other would be useful to planners and policy makers. However, problems occur when looking at the relative costs of different forms of educational setting. There is the common difficulty of ensuring that comparisons are valid. As Hegarty comments, "It is likely that there will be so many differences in curricular provision, mode of working, other duties carried out by staff, and so on that any direct comparison of costs will be meaningless". (Hegarty, 1987, p.169).

7.3 Technological Research.

Research and development in other areas like microelectronics can also have an important influence on the practice and range of integrated teaching. Fish has commented in relation to this point that, "New technologies are likely to increase the abilities of many who are disabled to manage their environment and to develop greater independence and interaction with others". (Fish, 1985, p.129). Broadbent and Curran have related this point directly to the field of further education and widening career possibilities. They state, "technological aids have advanced to a level that can, with careful planning and support, help learners with disabilities to gain access to a broader range of academic and vocational courses in further education. By increasing access to courses there will be an increase in the range of opportunities for people with
disabilities in training and employment". (Broadbent and Curran, 1992, p.1). Hegarty, in relation to visually impaired individuals, has spoken of the "spin-off" bonus to special education of research in this area. This, he argues, has, "facilitated note-taking, personal record keeping and draughting written work ... thus permitting effective participation in mainstream learning". (Hegarty, 1987, p.185). Fetton has made an interesting observation in relation to the impact of technology in the area of visual impairment. He writes, "The triumph of Braille over raised forms of print in the late nineteenth century was significant in the emergence of special schools rather than integrated education as the norm. There is every reason to believe that our success in exploiting modern technology to meet communication needs will be an equally important influence on the success of current initiatives to integrate visually impaired children into mainstream schools". (Fetton, 1988, p.15).

In some ways micro-technological aids for visually impaired individuals have led developments in this particular aspect of special education. Behrmann notes that, "The visually handicapped were among the first to benefit from new applications, and as a result, greater numbers of specialised devices and more widespread usage is common for this group". (Behrmann, 1985, p.116). Cain and Taber have argued in a similar way that, "The blind and visually impaired were among the first handicapped people for whom electronic technologies were adapted." (Cain and Taber, 1987, p.18).

As early as 1977 Jamieson wrote of, "almost revolutionary developments" in this field. (Jamieson et al., 1977). Hatlen and Curry (among others) have made the important link between greater integration for visually impaired individuals and advances in equipment that allows, "blind
and visually impaired children to do classwork with ease" and, "allowed teachers to prepare for these children the same assignments given to sighted children". (Hatlen and Curry, 1987, p.8). Cain and Taber have commented in relation to electronic equipment, "The student can ... obtain the output in more than one way, one for the student in a braille output form and another in printed form for the teacher. Thus the teacher will not have to be familiar with braille, an important factor for regular classroom teachers." (Cain and Taber, 1987, p.19).

Desktop and portable computers with synthetic speech, enlarged character display and soft braille devices have had a significant impact on study methods for visually impaired students. This last method is not as well known as the other two. It is a mechanical device with usually twenty, forty or eighty braille cells. The braille dots are produced by small rods which rise and fall, driven by a complex mechanical system. The user reads a line of braille which is then replenished automatically. Apart from the advantage of, "portable notebooks with search and retrieve facilities" these devices had the additional advantage of "quiet operation which avoided distracting or disturbing other students". (Hawkridge et al., 1985, p.132). The unobtrusive nature of these devices is an important factor for effective integration. The development of reading machines such as the Optacon (which led the way for print access for the blind but has now been largely overtaken by newer developments) and scanning/OCR technologies (e.g. the Kurzweil and Arkenstone Readers) have also had considerable impact for students unable to use sighted methods of study. Comme Les Autres has pointed out the importance for integration of, "Optacons, Digicassettes and Versabraille". (Commes Les Autres, 1982). A study in Italy reported that, "Experience of deinstitutionalisation and social integration has grown with Optacon". (Hawkridge et al., 1985, p.122).
It is also the case that in the same way as integrated provision has been assisted by these new technologies, special school programmes can benefit, too. Little research has been carried out on the impact of micro-technology in special schools but a study by Croft and Chaplin (1984) on a residential school for visually impaired students indicated an area of possible difficulty. They comment on, "some of the problems of introducing a new technique into a school where potential advantages of a system can be hidden by the need for students to change existing practice". (Hawkridge et al., 1985, p.137). Jamieson made the important observation, "No technology is useful unless it is used imaginatively". (Jamieson et al., 1977). Where the technology is used effectively in the special sector, there are clearly advantages to be gained in developing new equipment with a large client base in one institution. An example of this would be the development work that was done on the Mountbatten Brailler at the Royal National College. It is clear that research and development in the area of information technology has made it easier for visually impaired people to gain access to mainstream education and training courses and to wider employment areas. This has been largely a by-product of developments in computing rather than a main thrust for these advances.

Developments in the field of microelectronics have clearly assisted in the opening up of mainstream options for visually impaired people. However, not all developments have been beneficial. There has been a problem with graphical user interfaces (GUIs) on computers for some time. In recent years there has been a growth in the use of graphical user interfaces on computers which restrict some visually impaired users. These were first used on Apple Macintosh machines and since have been introduced to PCs. Heuer writes, "The introduction of MS-Windows as a graphical
user interface, which are imposed over the well known DOS drive system, severely restricts the use of PCs by the blind, since the present methods of character recognition - braille display, synthetic speech and to a large extent also amplification systems - are unable to provide access to the display". (Heuer, 1991, p.79). This may well be an overstatement of the case. Although speech and soft braille output at the moment cannot cope with the GUIs there are screen enlargement systems that can be used effectively. Research is continuing in this area to achieve access for totally blind users. Developments in the use of the Optacon connected to a PC have produced interesting results. Other approaches to the problem are being developed. The National Federation of the Blind have noted, "A ray of hope may be on the horizon from the USA, where the recently passed 'Americans with Disabilities Act', requires manufacturers seeking orders from the Federal government to ensure that their hard- and software can be used by the visually impaired as well". (NFB, 1991, p.39). Clearly this research needs to be encouraged in order that visually impaired individuals can continue to use this important and potentially liberating technology.

7.4 Research - Conclusions.

Research and development in the field of computer technology has provided some clear answers to problems of mainstream access that seemed intractable a decade ago. However, reviews of the research on the general theme of integrated and segregated provision do not provide such clear conclusions. The research findings on these general themes do not point in any particular direction. Cave and Madison concluded their review of the evidence by stating, "It is increasingly apparent that the question, 'which is the most effective form of organisation?' is incapable of answer".
(Cave and Madison, 1978). Bishop concluded her review of research in the area with the statement, "There appears to be no conclusive body of evidence to provide either positive or negative proof of the efficacy of mainstreaming for visually handicapped students". (Bishop, 1986, p.939). Similarly, Hegarty concluded his review with the statement, "The empirical evidence that would settle it decisively is simply not available". (Hegarty, 1987, p.58). Hegarty did not regard this as a particular difficulty and went on to argue that it had the advantage of making clearer the basic issues that were involved. He stated, "There is no clear balance of advantage for or against integration. ... In some ways this is a good thing, since it leaves the way clear for more fundamental concerns". (ibid., p.59). Bishop has written about mainstreaming as a, "philosophical bias". (Bishop, 1986). Booth and Potts have also looked at the debate in this way and argued that, "Whether or not children with a wide range of handicaps should be involved in ordinary schools primarily involves a moral choice". (Booth and Potts, 1983, p.6).

Hegarty has spelt out the fundamental concerns. He defines them as, "the right to education; the right to equality of educational opportunity; and the right to participate in society". (Hegarty, 1987, p.60). This definition in some senses brings the argument back to the first part of this thesis where definitions of integration put forward by a number of educationalists echo Hegarty's statement. What is clear is that educational research can not give definitive answers to such generalised questions and it may be that research along such lines is misdirected and unlikely to be profitable. Clarification of the issues and evaluation of particular approaches and practice may be more useful. Erwin has argued that, "The debate over integration is not unhealthy. Perhaps it will encourage practitioners and
researchers to study and document this complex issue more closely." (Erwin, 1991, p.254).

This thesis has so far considered the educational definitions of integration that have been put forward by many writers and official bodies and the trends and research that have taken place in this area. The last section of this part looks at the legislative and statutory developments that have taken place that have been related to the theme of integrated provision of special education.
8. Integration and Legislation.

8.1 The Influence of American Legislation.

Most writers look to the USA and the Supreme Court judgment in 1954 in the Brown v. the Board of Education as the landmark legal decision in the development of the rights of minority groups to share in the rights of mainstream life. The famous case concerned racial segregation in schools and reaffirmed the rights of racial minority citizens to equal educational provision. In an attempt to justify the policy of racial segregation in schools the educational authority had argued that segregated provision did not mean inferior education. In an historic decision the Supreme Court found that the, "separate but equal" provision was, "inherently unequal". (Lowenbrau and Affleck, 1976). Other minority groups in America noted this judicial success and looked to the courts to improve their own position. One of the increasingly active minority groups to follow this lead was that concerned with the rights of handicapped individuals to an appropriate education. Pressure groups were established to pursue the objective of greater integrated provision for "exceptional" individuals. McIntire has noted, "Advocacy organisations increasingly pushed for the rights of blind and other handicapped children to be educated with non-handicapped children where appropriate". (McIntire, 1985, p.162). Bishop has written of the, "growing activism and advocacy" of parents, "claiming equal educational opportunity for their visually handicapped children" and that, "visually handicapped children were among the first to be mainstreamed". (Bishop, 1986, p.939).

In the American courts an action known as the class action suit has often been influential in changing the situation of particular groups in society. A class action suit is one
that applies, "not only to the individual who brings the case to court but also to all members of the class to which that individual belongs". (Kirk and Gallagher, 1986). An example of this type of case was the judgment of the court of Eastern Pennsylvania in 1971 which stated that, "Placement in a regular school is preferable to placement in a special school". (Lowenbrau and Affleck, 1976). Another example was the case of Mills v. the Board of Education, 1972, which stated that the absence of funds was no excuse for failing to provide services to exceptionable children. The judgment stated that, "If there are insufficient funds, then all programs should be cut back". (Kirk and Gallagher, 1986, p.35). In 1974 in Massachusetts the integration of exceptionable children into regular schools was pioneered by the Bartley Daley Act. Events like these led to pressure on educational authorities who in the end looked to the government to provide legislative guidance and extra funding to provide the increased educational services that were being sought for individuals with disabilities. "Ultimately, state and local leaders turned to Washington, pressurising Congress to pass the Education For All Handicapped Children Act (1975)". (ibid., p.23).

The full title of this law is Public Law 94-142 (1975); the Education For All Handicapped Children Act. It was passed in 1975 and came into force in 1977. The law was based on six key principles, one of which has become an extremely well known and much used expression in the field of integration. This was the principle that exceptionable children should be educated, "in the least restricted environment". (Loc. cit.). Kirk and Gallagher comment that, "The philosophy was to move as close to the normal setting (regular classroom) as feasible for each child". (Loc. cit.). The other key principles were that all children with disabilities were to be provided with an appropriate education. There was no longer the option of
not providing these services. Non-discriminatory evaluation of educational needs along with due process, parental participation and individualised work programmes were the other principles. The federal government authorised funding up to $3 billion by 1982 to implement the new law. The effects of these changes have not yet been fully evaluated and it is clear that changes in provision have proceeded rather less speedily than some supporters of integration might have hoped. Kirk and Gallagher have commented that, "Even with federal assistance implementation has come slowly. The outcome of the burst of judicial activity is yet to be determined". (ibid., p. 27). Nonetheless, this American legislation has been regarded as an important and influential factor in educational developments for individuals with disabilities in an international context.

Supporters of integrated educational provision obviously welcomed the, "least restrictive environment" (LRE) principle and it is clear that moves to increase integration received a considerable boost by this legislation. At the same time it is important to stress that LRE does not mean automatic mainstreaming. Some writers have stated that, in fact, that LRE makes special schooling a statutory necessity in that for some individuals the special school will be the least restrictive environment. Champion states, "the law (PL94-142) does not mandate the child be educated in any one specific service delivery model. The law does require that there be a continuum of alternative placements available". (Champion, 1979, p.247). Silverstein has commented in a similar way that this legislation means that segregated provision is essential. He states, "The existence of residential schools providing specially designed programs is required by federal law". (Silverstein, 1985, p.145). Clearly, the new legislation required that a continuum of provision be established from segregated special schooling through to integrated mainstreaming. Chapman and Stone have
argued along these lines that, "A range of educational programmes is needed in order to offer the least restrictive placement for pupils." (Chapman and Stone, 1988, p.195).

Public Law 94-142 has been interpreted in the American courts on a number of occasions and this has clarified some aspects of the legislation. An interesting point was made by the Grace v. Springdale School District in 1982. The court concluded that although the special school for deaf children was the best placement for a child, the mainstream programme that the family wanted was appropriate and should be provided by the education authority. It seems that the "best" placement is not necessarily the only legally enforceable one. A related case was heard in 1983. In the Roncker v. Walters case of that year the court decided that the special school placement was superior but that the same facilities should be made available in the non-segregated setting. It seems clear that the American courts have interpreted the law in a way that shows a, "clear and strong preference for educating handicapped children with non-handicapped children". (Silverstein, 1985, p.146).

This same perspective is apparent when looking at the specific field of visual impairment. McIntire has concluded that, "Residential schools for blind persons are not the least restrictive environment for the majority of blind children for the majority of their educational years. This is the opinion of numerous judicial and legislative bodies". (McIntire, 1985, p.162). In terms of visually impaired individuals Erwin has noted official figures for 1989 that show, "Approximately 82 percent of visually impaired children and youths aged 3-21 are in regular educational settings, compared to only 17 percent who are served in other types of environments." (Erwin, 1991, p.235).
8.2 The European Experience.

Similar processes have occurred in other countries. Pressure groups advocating greater integration of special needs provision have been established in a number of countries. For example in France the ANPEA (Association Nationale des Parents d'Enfants Auveugles) has worked, "depuis de nombreuses années défendre l'intégration". (ANPEA, 1982). In Britain the British Council of Organisations for Disabled People are, "pressing for better quality integrated education". (Chapman and Stone, 1988). In the field of visual impairment in Britain the NFB (National Federation of the Blind of the United Kingdom) and the ABAPSTAS (Association of Blind and Partially Sighted Teachers and Students) have vigorously pursued the objective of greater integration for visually impaired individuals. These last two organisations have jointly stated that they, "are representative organisations of visually handicapped people themselves. ... Our commitment to supported integration has been arrived at after widespread consultation and prolonged thought and study". (Moody, 1983, p. 209). Low noted that the role of the NFB was to, "bring pressure to bear on government and local authorities for a commitment to the extension of integration". (Booth and Potts, 1983). Pressure groups have been established in order to exert some influence on governments and to that extent have been a contributory factor in bringing about new legislation.

One example of such legislation can be found in Italy. This was Law 118 of 1971 and it stated, "Handicapped pupils of compulsory school age have to be educated in ordinary classes, except where impairments are too severe to make this possible". (CERI, 1983, p.13). Another example is provided by Norway where laws of 1974 and 1975 covered the integration of special needs education. In an interesting
part of the 1974 Education Act, Section 8, it stated that as, "the rights of the handicapped were explicitly included in the ordinary Education Act, special legal provisions for them were unnecessary". (Loc. cit.). Legal endorsement of integration was given to both compulsory and post-compulsory education in Norway. In Denmark a law which came into force in 1980 transferred the responsibility for educating individuals with disabilities from social welfare to education authorities - "thus recognising the right of all to be educated with in the education service". (Fish, 1985). At the UNESCO Conference held in Spain to mark the Year of the Disabled Person a common declaration was drawn up called the Sundberg Declaration. This brought together many of the trends outlined in this chapter. Fish has commented that this was the culmination of, "the belief in the right of access to education, where possible in ordinary schools, ... common to a number of countries where legislation has followed changes in attitudes and better understanding of the needs of those with disabilities". (ibid., p.3). The articles of the Declaration reaffirm the rights of individuals with disabilities to appropriate education which should, "be aimed at reducing the handicapping effects of disabilities and maximising integration in society". (Loc. cit.).

8.3 The 1981 Education Act.

In this country 1981 marked the passing of legislation which concerned the provision of special education and the theme of integrated provision. In one sense there was nothing radically new in the 1981 Act on this question in that integration of individuals with disabilities had been encouraged by governments since 1944. The Education Act of that year stated, "as far as is practicable special schools shall provide for the education of pupils in whose case the
disability is serious. Where the disability is not serious the arrangements may provide for giving such education in any school". (Education Act, 1944). Booth and Potts have noted this and stated that, "Advocacy of an integration policy has been official government policy since the war". (Booth and Potts, 1983). Government documents such as Education Circular 26 of 1954 underlined this point. "No handicapped child should be sent to a special school who can be satisfactorily educated in an ordinary school". (Circular 26/54, 1954). In 1976 the Education Act was seen as giving more encouragement to the development of integrated provision. "Section 10 of the 1976 Education Act provided an initial legislative boost which was confirmed by the Education Act of 1981." (Hegarty, 1987, p.17). Section 10 had the effect that individuals with disabilities were to be educated in ordinary schools rather than special schools. It stated, "The arrangements made by LEAs for special education treatment in England and Wales shall provide for the education of handicapped pupils in county and voluntary schools, in preference to special schools, unless this would prove impracticable, incompatible with the efficiency of the school or would involve unreasonable public expenditure". (Education Act, 1976).

Of course, the Warnock Report (1978) was an influential factor in the development of new legislation and in the growing awareness that traditional approaches to the provision of special education were becoming increasingly inappropriate. Hegarty and Evans have noted that the Report and the 1981 Act "gave 'official' recognition to the concept of 'special educational need', and to the concern of special education of meeting children's needs rather than with categorising them". (Hegarty and Evans, 1985, p.1). The Warnock Report has described legislative support for integration in terms of, "The principle is not new or revolutionary, but rather accords with a consensus of public
feeling that handicapped people should, as far as possible, be enabled to take their place in the general community". (Special Educational Needs, 1978, p.115). The 1981 Act was not the first to encourage the integration of special needs provision, but it was in some ways giving a radical new emphasis to this encouragement. Where previous legislation had simply noted that such integration could take place and had enabled authorities to do this, the 1981 Act took integration to be the first course of action. Hegarty has commented that, "Under the 1944 Act local authorities were expected to provide for handicapped children in special schools and were merely allowed to do so in ordinary schools if circumstances permitted. The 1981 Act exactly reverses this situation". (Hegarty, 1987, p.22).

The 1981 Act came into force in April, 1983. The Act was concerned with many of the trends outlined in this chapter as well as specifically with integration. The Warnock Report (1978) which, "supplied the philosophy for the Act" (Cohen and Cohen, 1986) made over two hundred and fifty recommendations, many of which were incorporated in the Act. The Act redefined special needs. The previous classification of ten categories was replaced by one definition. The focus moved from "diagnostic differentiation" to "meeting children's educational - and other - needs". (Hegarty and Evans, 1985, p.1). This was the new, broad concept of special educational need that the Warnock Committee intended should cover up to 20% of the pupils and young people in schools and colleges at some time during their education. The statementing procedure for identifying and assessing individuals with special needs was set up and provision was made for parental rights of participation in this procedure. The Statement of Special Educational Need was to be the result of a process of assessment by professionals and parents. The rights of parents were significantly improved by the Act.
While the Warnock Report raised the hopes of many who were to be, to some extent, disappointed by the subsequent legislation, it seems clear that the principle of integrating individuals with disabilities into mainstream education has been strengthened in legislative terms. Fish has commented that, "The 1981 Act accepts recent changes in attitude, recent research and new social values". (Fish, 1985). Cohen and Cohen have written that the 1981 Act supports, "the general idea of integrating children with special needs in ordinary schools". (Cohen and Cohen, 1986). Chapman and Stone have stated specifically about the area of visual impairment that, "The 1981 Act is significant in the educational placement of visually handicapped pupils, especially since the presence of visual impairments is no longer considered to be sufficient reason for special school placement". (Chapman and Stone, 1988, p.2). Hodgson has commented in a similar way that the, "move towards educating ... visually handicapped pupils in mainstream schools ... is expected to increase". (Hodgson, 1985, p.35). Hodgson clearly saw this development as already underway before the implementation of the 1981 Act but regarded the new legislation as a considerable boost to this process. Hegarty has concluded, in general terms that, "It is a major principle of the Act that children with special educational needs should be educated in ordinary schools to the greatest extent possible". (Hegarty, 1987, p.21).

Strengthening the statutory principle of integration does not, of course, mean that change will be implemented effectively. Oliver has noted that, "commitment has yet to be translated into material terms" (Oliver, 1985) and Fish has argued that, "For many the Act does not go far enough in respect of integration". (Fish, 1985). The Act does not compel education authorities to act in this matter. Goacher et al. have noted that the explanatory circulars that followed the passing of the legislation and which presented a model of good practice were of value but that, "Circulars do not have the force of law". (Goacher et al., 1988). Hegarty has commented that the 1981 Act, "appears to place very little pressure on local authorities who are content to maintain the status quo". (Hegarty, 1987, p.21). Writers have specifically noted the weakness of the Act in two particular areas. These are what have been termed the "exclusion clauses" and the question of funding.

Booth and Potts have described these clauses in terms of, "all children are to be educated in ordinary schools unless this is not financially viable, interferes with the instruction of other children or is incompatible with them receiving the education they require". (Booth and Potts, 1983, p.10). The Act states, "That account has to be taken ... that educating a child in an ordinary school is compatible with a) his receiving the special education provision that he requires; b) the provision of efficient education for the children with whom he will be educated; and c) the efficient use of resources." (Education Act, 1981). These clauses of the Act can be seen as sensible guidelines for effective implementation or they can be seen as means of avoiding implementation. Russell has commented that, "the conditions so specified are framed so as to permit any LEA in the country to pursue a quite contrary
policy". (Cohen and Cohen, 1986, p.10). Hegarty has argued that, "whilst the exclusion clauses may lessen its bite, they do not make it toothless". (Hegarty, 1987, p.22). It is clear that LEAs that are determined to resist current trends towards integration can find means to avoid moving away from more traditional patterns of provision of special education. On the other hand, LEAs looking to integrate special education into the mainstream setting will find a good deal of support in this legislation. Welton and Evans have commented on this point that, "Where there is consensus such legislation enables and encourages ... where there is dissension, legislation inhibits". (Cohen and Cohen, 1986, p.14). Bob Dunn, Minister for State for Education, took the more positive view of the effects of the legislation when he said, "LEA practice varied enormously but, ... there had been considerable progress in this field (integration) including in many cases a radical rethinking of the existing organisation and curriculum planning of special and mainstream schools". (Dunn, 1987, p.3). The same pattern of response has been observed in the field of education for children and young people with visual impairments. Chapman and Stone, commenting on local authority provision for visually impaired individuals noted, "LEAs have considerably increased their ... services for visually handicapped children". (Chapman and Stone, 1988). Goacher et al. have noted the lack of consistent practice among local education authorities. They have commented that, "Some authorities were much further along the road to changing their policies in the direction that the Act indicated than others". (Goacher et al., 1988, p.161). They also caution against over-simplistic analyses on the relationship between statute and practice. "There is no simple, direct link between policy statements enshrined in legislation and policy outcomes evidenced by behaviour in individual situations". (Loc.cit.). It is possible that supporters of integration who looked to the American legislation as a model would be
disappointed by the 1981 Act. Russell has commented that, "Those who had perhaps expected that the Education Act would correspond to the USA Public Law 9.142 failed to understand that legislation in this country is usually enabling rather than prescriptive". (Cohen and Cohen, 1986, p.3).

The question of funding has been referred to by several writers. Russell's comments on the different approaches of the legislation in the USA and the U.K. could certainly be applied to the question of funding. As mentioned above, the American government made an initial $3 billion available for the implementation of the new Education For All Handicapped Children Act. In Britain there has been little sign from the government of a commitment to major investment in this area. Adams, referring to this and writing on behalf of the Society of Education officers has noted that, "The single potentially costly section, on integration, contains that interesting tail piece about efficient use of resources". (Adams, 1986, p.27). Adams goes on to state quite clearly that effective integration will require additional support from the government to make it a reality. "It is hoped that the resources necessary to bring about true integration can be made available but that it requires large scale commitment not only on the part of the schools, the teachers and the local authority but also by central government". (ibid., p.90). This point is echoed by Benton when she states, "It is commendable to set up committees, make legislation through Education Act, but ... if you will the ends, you must also will the means in order to provide the facilities for those ends to be met". (Benton, 1984, p.5). Warnock has commented that the economic down-turn of the 1980s made it more difficult to find increased funding for special education. In relation to the Warnock Report's new concept of special education she has said, "It might have worn better if it hadn't been for the recession". (Cohen and Cohen, 1986, p.129). Adams has referred to the
same point and stated that, "Any serious attempt to help the 'one in five' of the Warnock Report was never a realistic option in the financial climate of the 1980s". (Adams, 1986, p.27).

Some writers have argued that unscrupulous LEAs have used the 1981 Education Act and its support for integrating special needs provision as a means of reducing their commitment to special education. Cole has noted that, "Education officers and psychologists working in LEAs not favouring the residential approach may be strongly influenced by the high cost of providing residential education". (Cole, 1986, p.138). Barton and Tomlinson have commented more bluntly that, "There is certainly some indication that some local authorities are interpreting the 1981 Act as a licence to close special schools and place children in normal schools without offering money or resources". (Cohen and Cohen, 1986, p.43). They argue that there is nothing new in this approach and that, "Economic considerations have always been paramount in the development of special education". (ibid., p.39). Swann, too, has written in terms of, "to a large extent Local Authorities will see integration as the cheapest option". (Swann, 1981). Oliver has commented in a similar way that moves to cheaper integrated provision, "questions the humanitarian underpinnings in the shift towards community". (Oliver, 1985, p.87). To some extent, Adams supports this line of argument, noting that the lack of additional funding for integration of special needs provision could lead to a, "cynical view of the criteria used for the selection of what to frame in law". (Adams, 1986, p.27). Such a view might be strengthened by what Adams called, "the placatory and defensive noises about rearranging existing resources and developing different attitudes which were much in evidence at the time". (Loc. cit.). Goacher et al. have noted that, "rearranging existing resources" is not as straightforward
as is sometimes supposed. They comment, "We have noted the
difficulties of attempting to reallocate resources tied up
in one form of provision to forms which are more in line
with the Act's philosophy". (Goacher et al., 1988, p.162).
In mainstream schools the statementing process established
by the Act is regarded as a major way of obtaining
additional resources for individuals with special needs.
There has been criticism of the way this process operates.
Oliver has commented that, "It has been shown that more than
70% of local authorities are in breach of their statutory
duties in respect of statementing under the Education Act of

Clearly it is important to be aware of the debate over the
allocation of adequate resources in this area. At the same
time, it is worth noting that the "inadequate resources" argument could be used as an excuse to avoid implementing integration. Russell has commented on this point that,"While the issue of resourcing is of course a crucial one in the wider development of special education, it would be foolish to hide behind resources and ignore the possibility of change from within". (Cohen and Cohen, 1986, p.11).

Clearly the 1981 Education Act has limitations and was disappointing to some, particularly after the Warnock Report had raised expectations and the possibility of a higher profile and priority for special needs education. Nonetheless, it did mark an important extension of official recognition for the principle of integrated education. Hegarty has commented that, "The fact that the Act contains many apparent loopholes does not mean that it is thereby impotent". (Hegarty, 1987, p.22). Russell has noted the weakness of the Act and then stated, "but it generally true that legislation in this country tends to express the best of current practice rather than anticipate new developments". (Cohen and Cohen, 1986, p.10). Seen in a
wider perspective the 1981 Education Act appears to be part of an international trend towards greater integration for individuals with disabilities. After describing legislative initiatives in other parts of the world, particularly America and Scandinavia, Fish goes on to say, "The 1981 Act Education Act is a further example of similar changes being effected in England and Wales". (Fish, 1985, p.3).

8.5 More Recent Legislation.

The 1988 Education Reform Act and the 1992 Further and Higher Education Act introduced changes that clearly relate to the theme of integrated mainstream provision for pupils and students with special needs. The 1988 Act gave legislative recognition to special needs in further education for the first time. The 1992 Act places a duty on the funding bodies for students with learning difficulties. These Acts are considered in more detail in Part Two.

This thesis began by looking at the different definitions of special needs integration that have been advanced by writers and official reports in the field. An examination of these definitions showed a general and clear agreement, although some difference of emphasis was seen to exist. The discussion then moved to consider the main lines of development affecting this area of special education. The trend away from classification by disability towards assessing an individual's need in his particular environment was noted. This has led to a re-examination of the delivery systems for special needs provision and for pressure to change traditional patterns of organisation. This pressure for change has been to some extent resisted by certain sections of the special education sector. The counter-arguments of those supporting the traditional pattern of special education provision were examined as was the place of the voluntary sector. The latter which has been criticised for "institutional resistance" was seen to be amenable, to some degree, to changes in traditional practice and approaches.

Protagonists for and against expanding integrated provision have looked to research for evidence on the effectiveness of differing delivery systems. Research in this field, while clarifying some of the issues and lines of argument, does not, however, provide clear cut evidence for the general superiority of one pattern of special needs provision as against another. This brings question of integration to more general and fundamental principles rather than the benefits and disadvantages of particular practices.

The last part of this opening section looked at the legislative support for the principle of integration, both
nationally and internationally. This can be seen, to some extent, as legislative recognition of some of the trends and development outlined earlier. Jamieson has written of, "the gathering international groundswell in favour of extending or introducing integration". (Jamieson et al, 1977, p.216). In looking at the specific area of individuals with visual impairments Jamieson has noted that, "we believe that the movement to integrate visually impaired children in ordinary schools is here to stay - that it is unlikely in the medium term future, to be arrested, and almost certainly will not be reversed". (ibid., p.214). This still seems a reasonable conclusion. This is not to say that special schools have no place in the spectrum of special needs provision. Several writers have indicated that legislation in different countries which encourages integrated education at the same time makes clear a continued role for the special school. There is generally a more widespread acceptance of the idea of a greater range of options being available for the education of children and young people with special needs according to their own individual situations. Cropp has argued that, "when considering the needs of the blind and partially sighted pupils ... all systems presented constraints in one form or another." (Cropp, 1985, p.51). He went on to argue that, "the most appropriate might depend on what priority system met an individual's particular need". (Loc. cit.).

In his conclusion to his 1987 work, Dessent summed up much of the above argument. He stated, "To some extent meeting special educational needs always has been and probably always will be, a matter of compromise. Separate special schools represent yesterday's 'compromise' to the questions all societies face about the needs, the rights and the priority to be given to handicapped and disadvantaged individuals. In the future, mainstream schools are likely to be the base for a new set of compromises." (Dessent,
1987, p.168). The next part of this thesis looks at some of the basic difficulties to be found in this, "new set of compromises" and considers ways to minimise them.
Part Two.

A Review of the Field of Special Needs Integration Support with Particular Reference to Further Education and Individuals with Visual Impairment.

10. Outline of Part Two.

The trend towards further integration, within a framework of a continuity of provision from segregated special education through to mainstreaming, seems to be becoming increasingly established in this country. Nonetheless, the very real concerns of those who have questioned the ability of the mainstream to provide an environment that will ensure that individuals with special educational needs maximise their learning potential, cannot be ignored. These concerns seem principally concerned with making appropriate support services available to these individuals so that the advantages of mainstreaming (fully examined in Part One of this thesis) are not outweighed by the disadvantages of reduced levels of support. Clearly, the integration of special needs provision without the appropriate levels of support could lead to a worsening of educational opportunity. Part Two of this thesis looks closely at this area of support in the mainstream.

This area of support provision relates closely to the concept that integration is a matter of change on both sides and is not something that is "done to" the individual with special needs. This more developed concept of a new and expanded environment where the educational institution and the individual adjust to the needs and demands of each other, is an important one. Principally it has been the provision of support services in the mainstream that has made possible this "new and expanded" educational
environment. Moses, in this connection, has stated that, "Ordinary schools must not simply accept a wider range of pupils than before; they have also to make appropriate provision for them". (Moses, et al., 1988, p.3). Attention has focused on this and the success or failure of an integration scheme can be closely tied to it. Part Two of this thesis looks at this important area and addresses the concerns of those who have argued that the support systems of the traditional segregated pattern of provision cannot be successfully reproduced in the mainstream. The thesis examines those areas of support provision that have been felt to be of value in general and for students with visual impairments in particular.

Part Two begins by considering the legal basis for further education and looking at the growth in general student numbers in this area. This growth is mirrored in the growth in the number of students with special needs in mainstream further education. The thesis then addresses specific areas of support provision which have been identified by many writers as significant factors for effective integration. These include, in broad terms, the value of proper planning and preparation; staff education and training; the importance of attitudes in this area; the use of appropriate materials and teaching strategies; the use of specialist technology; the question of physical access; and the complicated area of student funding.

This breakdown of support services into a number of generalised fields should not divert attention from an important basic point. This is that effective integration of students with special needs is best ensured when these various factors come together. Ensuring the 'right mix' of these variables is an important aspect of effective integration programmes. Nonetheless, it seems useful to investigate the relative value of these variables so that
the planning and preparation of integration schemes can be more effectively carried out. The last section of this second part looks at a number of surveys that attempt to provide a guide to the rank order of some of these variables. These surveys are generally based on the views of teachers, administrators and parents. The student perspective tends to be overlooked.

11.1 The Legal Basis for Further Education - The 1944 and 1981 Education Acts.

It seems appropriate to begin this examination of the provision of support service in the field of further education with an overview of the legal position of this aspect of the education system in this country. The first part of this paper looked closely at the 1981 Education Act and the strengthening of the principle of integrated educational provision that emanated from the Act. This certainly 'spilled over' into the area of further education and led to an increasing interest in integrated provision in this sector. Cooper has noted that, "The 1981 Act was introduced at about the same time as the major upsurge in interest in further education for young people with special needs. However, the legal basis for further education lies not in the 1981 Education Act but in the 1944 Education Act". (Cooper, 1986, p.1). Adams has made a similar observation about the 1981 Act's limitations in this area. He states, "The absence of or inadequacies in current provision led the Warnock Committee to identify the provision for young people with special needs as one of their three areas of special priority. ... In spite of this, the subsequent legislation made no mention of the post-sixteens". (Adams, 1986, p.91). When the 1981 Act was being drawn up there had been an indication that additional legislation would be introduced to deal with further education. McGinty and Fish have commented on this point. "Further and continuing education was omitted from the 1981 Act. Although a promise was made at the time to bring in separate legislation nothing was done." (McGinty and Fish, 1992, p.25).
The 1981 legislation was, in this respect, disappointing and it is necessary to turn to the 1944 Education Act and, to some extent, the 1988 Education Reform Act in order to examine the legal status of provision in this area. The 1944 Education Act, Section 8 (1) states, "It shall be the duty of every local education authority to secure that there shall be available for their area sufficient schools - for providing secondary education, that is to say, full-time education available to the requirements of senior pupils, other than such full-time education as may be provided for senior pupils in pursuance of a scheme made under the provision of this Act relating to further education." (Education Act, 1944). Section 114 defined "senior pupils" as those between 12 and 19 years of age. Section 41 of the Act states, "It shall be the duty of every local education authority to secure the provision for their area of adequate facilities for further education." (ibid.).

The legal position of further education, particularly in regard to young people with special educational needs was summarised in the Warnock Report. The report stated, "Local education authorities have a duty, which is not widely recognised, to provide for all young people who want continued full-time education between the ages of 16 and 19, either in school or in an establishment of further education, though not necessarily whichever of the two the individual prefers. It is essential that they should fulfil this duty and ensure that adequate numbers of places in schools and establishments of further education are available to and taken up by young people with special educational needs". (Special Educational Needs, 1978, para 10.28). Adams, representing the Society of Chief Education officers, has examined this area closely and argued that the Warnock Report's interpretation may be a little optimistic. He refers to this statutory situation as, "somewhat ambiguous". He expands this statement by noting that, "It
is uncertain how far those duties extend: whether for example, they extend without limits to providing a school place with suitable education for every 16-18 year old if requested, or similarly if preferred suitable placement is in a college of F.E." (Adams, 1986, p.92). In practice Adams notes that the "Warnock interpretation" of the LEAs' duties in this area has generally been accepted and he adds, "the judgment in regard to Oxfordshire and the post-16 education of a mentally handicapped pupil" (Loc. cit.) had reinforced this.

A difficulty that remains and arises as a result of the 1981 Act is one concerned with the statementing procedure that was established as part of that legislation. While the statementing procedure has effect in mainstream schools (and special institutions) up to the age of 19, this is not the case in mainstream further education. The Fish Report has commented on this. It notes, "A particular difficult issue arises with young people who are the subject of Statements at the age of 16. ... If they remain in school the Statement continues in force until the age of 19. If they leave school and enter further education the Authority ceases to maintain a Statement. This situation creates anomalies". (ILEA, 1985, p.107). Expanding this point, the Report went on to state, "The support services generally available in schools - psychological, social work, medical and paramedical services - are available in colleges only as a result of goodwill of local professionals. They are not generally available as of right". (Loc. cit.).

Even after the 1981 legislation these and other aspects of further education remained unclear. The government issued a publication in 1981 entitled, "The Legal Basis of Further Education" (HMSO, 1981). This advocated a clarification of the situation which clearly indicated that the current position was unsatisfactory. It was not until much later in
the decade that the Education Reform Act (1988) provided a clearer basis. The position of adult education was even less clear. Adult education is an important area and often seen as a link into further education. However, as the Fish Report commented, "Provision for adult education is non-statutory". (ILEA, 1985). To some extent, adult education has been weakened by the removal of support for non-vocational schemes as a result of the 1992 Further and Higher Education Act.

11.2 The 1988 Education Reform Act.

The 1988 Education Reform Act has added some clarification to the position of further education and special needs students. The main terms of the Act were concerned with other areas of the education service. The Act introduced the National Curriculum and assessment tests; Local Management of Schools (LMS); and brought changes to Grant Maintained Schools (GMS) arrangements to encourage schools to opt out of local authority control. Many involved in the area of special needs feel that these changes, particularly the ones relating to core curriculum and standard assessments pose a threat to integrated special needs provision. Barnes has commented that, "The mainstream's inevitable preoccupation with meeting the new requirements will make provision for disabled children an even lower priority". (Barnes, 1991). It is still too soon to see whether this pessimistic view is well founded. The legislation also gave some clarity to the position of students with special needs in F.E.. McGinty and Fish make the point that, "the 1988 Act was the first time that the needs of people with disabilities and learning difficulties had been mentioned in further education legislation." (McGinty and Fish, 1992, p.47).
The Act states that local education authorities have a duty to, "have regard to the requirements of persons over compulsory school age who have learning difficulties". (Education Reform Act, 1988, para 120). The definition of "learning difficulties" is that provided by the 1981 Education Act. The 1988 Act also empowers the "higher education corporation" to, "provide facilities to meet the needs of disabled students". (ibid., para 124). This legislation has been supplemented by the 1988 Draft Guidance on Further Education Schemes and Articles of Government (DES, 1988). This government document accepts that making integrated provision for students with special educational needs has resource implications. Corbett notes that, "the Draft Guidance acknowledges that provision for those with special educational needs requires separate resource weighting". (Corbett, 1989, p.14). Corbett takes an optimistic interpretation of responsibilities of the local education authorities in this regard. She states that, "If an authority is to include further education provision for students who experience difficulties in learning, it must provide staff training programmes, offer appropriate resources and maintain financial responsibility for providing for changing needs". (Loc. cit.). This 1988 legislation is too recent for its effects to be fully appreciated and the changes to further education brought about by the 1992 Further and Higher Education Act make this even more difficult to judge at the moment. Corbett's optimism may or may not be well founded on this question of resource implications of integrated special education provision.

The Draft Guidance document also recommends that there should be a representative on the Board of Governors with knowledge and experience of the special needs area with a brief to promote the interests of students with special educational needs. This can be seen as a clear advance in
the position and status of special educational needs. However, this recommendation does not have the force of law and, again, it is necessary to await future developments to measure what impact this has. Whitbread has summed up the impact of the Act on further education. He states, "provision of further education is now on a firm basis, and is more broadly defined in a manner that should extend opportunities for sixteen year olds." (Chitty, 1991). It seems likely that it will extend opportunities for sixteen year olds with special needs, too.

11.3 The 1992 Further and Higher Education Act.

The 1992 Further and Higher Education Act was rushed through parliament ahead of the 1992 general election. It represented many elements of the prime minister John Major's approach to post 16 education and training as outlined in his introduction to the white paper, "Education and Training for the 21st Century" (HMSO, 1991). In this he stated, "Our objective is simple: it is to encourage all our young people to develop to the best of their ability. We want to knock down barriers to opportunity. ... In short, our aim is to give every one of Britain's young people the chance to make the most of his or her particular talents and to have the best possible start in life." (ibid., p.1, para 4).

The Act removed the distinction between Polytechnics and Universities. It established funding councils to run colleges in place of local education authorities. These councils inherit the duty which had previously been placed on LEAs for students with learning difficulties. Interestingly, there is the statement that extends the age of such students from 19 to 25 years. The Act discusses provision for any student, "who has a learning difficulty and is over compulsory school age but has not attained
twenty five years." (Further and Higher Education Act, 1992). However, funding for such students is not automatic. It is likely that we shall have to wait to see how this part of the Act is implemented in practice before the importance of the age change becomes apparent. Another important point connected with this legislation is that of the assessment of student need. The Act states that the Funding Councils shall have a duty to, "have regard to the requirements of persons having learning difficulties". (ibid.). This could be interpreted to cover proper assessment of student need but it is by no means absolutely certain. This area will also need to be monitored to see what the consequences of this will be. It is likely that government guidance circulars will clarify the position in the future.

The Act also attempted to establish a system of qualifications which would give equity to vocational and academic certification. Once again it is too soon to know the effects of these changes at the moment. There is certainly concern that a too rigid approach to competency testing and curricula inflexibility could disadvantage students with learning difficulties. On the other hand it may be that the Act will provide an opportunity for these concerns to be acknowledged. In this respect, as in others, it may be that the position of students with special needs has been improved by this legislation. What is clear is that the position of such students has been given clear recognition.
11.4 The Growth in Integrated F.E. Provision for Individuals with Special Educational Needs.

Despite the lack of clarity of the legal position of further education prior to the 1988 and 1992 Acts, there has been a clear growth in provision for individuals with special needs in this sector over the last decade. Many have noted the opportunities that further education can provide. In 1972 the Vernon Report commented that, "For some blind and many partially sighted school leavers, integration in existing further education establishments for the sighted may be preferable to special institutions for the visually handicapped. The polytechnics and colleges of further education provide rich educational, technical, cultural and social opportunities". (The Education of the Visually Handicapped, 1972, 8.23). The Warnock Report advocated similar opportunities. The aims of post-16 education were described in terms of, "To enlarge a young person's knowledge, experience and imaginative understanding, awareness of moral issues and capacity for enjoyment; and secondly to prepare him for entry into the adult world as an active participant and responsible contributor, with the maximum capacity for independent living". (Special Educational Needs, 1978, p.5). The Report went on to state that, "We recommend that wherever possible young people with special needs should be given the necessary support to enable them to attend ordinary classes of F.E.". (ibid., p.174). With regard to young people with visual impairments the Report commented that, "The provision of F.E. and training for the visually handicapped needs reconsidering. In particular, the present national specialist centres will need to provide support and advice for students and teachers at other establishments of F.E.". (ibid., p.213). The Warnock Report provided clear support and encouragement to expanded integrated further education provision by these statements.
In an international context CERI spoke in terms of, "the growth of vocational education and training in ordinary colleges". (CERI, 1983). In 1985 at a national conference called in response to the increasing volume of special needs provision in further education, the Secretary of State, Sir Keith Joseph, stated, "Experts tell me there is evidence that the parents of the young people are increasingly aware of the potential advantages of further education, and are exerting pressure on local authorities for their children. ... I am sure that they are right". (Stowell, 1987, p.1). McGinty and Fish have also described this effect. They write, "It was pressure for equal opportunities from disabled young people and from voluntary societies representing their interests together with an increased awareness of their basic human rights that resulted in their inclusion." (McGinty and Fish, 1992, p.6).

One of the difficulties that the Secretary of State faced in relation to this question was the lack of statistical information on student numbers in what was regarded as an area of significant growth. In the light of this the National Bureau of Handicapped Students (NBHS) was commissioned by the Department of Education and Science to carry out a survey of student numbers. (See below). In the same year the Fish Report acknowledged the increase in demand for further education from individuals with special needs and stated that, "Specifically the role of the Education Service should be to remove barriers to the curriculum and to provide the facilities and support systems necessary to enable all young people to participate successfully in further and continuing education". (ILEA, 1985, p.103). Fish stated clearly that, "It is important that this choice is available for young people". (ibid.).
The same observation was made from a different perspective by Adams, commenting on behalf of the Society of Chief Education officers. In 1987 he noted that the growth in this area was a recent phenomenon. He observed that, "Until fairly recently, special provision in F.E. for the handicapped student was minimal". (Adams, 1986, p.92). He goes on to state the advantages of further education to young people with special needs in terms very similar to Warnock's in the previous decade. "For handicapped students, and particularly those whose education has been in segregated schools, the F.E. college has much to offer. It provides a more adult atmosphere, daily contact with students of widely differing skills and outlooks, and an introduction to a less protected environment, with new disciplines, new approaches and attitudes to learning and living". (ibid., p.93).

Several commentators have commented that the situation with regard to higher education is rather different to that of further education. CERI has commented on this point. Their research indicates that while the more academically successful students with special needs in higher education have less difficulties being able to pursue their studies, those with less academic ability are likely to encounter greater problems. CERI states, "The able young handicapped person who graduates, qualifies as a lawyer or a doctor is much remarked upon but even amongst the highest levels of ability there are proportionately far fewer of the disabled fulfilling their potential. The general position amongst those of average or somewhat above average ability is likely to be as, if not more inequitable, whilst those of below average ability are unlikely to have any access to education or training beyond the statutory school leaving age". (CERI, 1983, p.20). It seems likely that the recent increase in the numbers of students with special needs in the F.E.
sector is in part a reaction to the recognition of the
"iniquity" that CERI describes.

11.5 The Growth in Integrated F.E. Provision for Students
with Visual Impairments.

In the field of visual impairment this increase in further
education student numbers is noted by Patten. He states
that, "One of the main factors leading to the growth in the
numbers of visually handicapped students ... has been the
very great expansion of opportunities in further education.
While exact records of the total numbers of students were
not kept by the RNIB until 1980, it is certain that the
number attending colleges of further education before that
date was small". (Patten, 1988, p.5). This confirms
Butler's earlier observations. Butler stated, "It is
difficult to access the proportion of visually handicapped
school leavers entering further or higher education. The
indications are, however, that ... entry to mainstream
further education has until recently been fairly limited".
(Butler, 1986, p.17). Traditionally visually impaired
individuals went to segregated further education colleges
such as Queen Alexandra College, Birmingham, the Royal
National College, Hereford, or the Commercial and Vocational
College in London. These were run by voluntary societies
operating national remits. It seems that students with
special needs in higher education have been more successful
in following courses of their choice in the mainstream than
has been the case, until recently, in further education.

NFB/ABAPSTAS have argued for many years that, "All visually
handicapped children should have unrestricted access to the
institution of further and higher education of their choice,
provided that they can satisfy the entrance requirements of
the institution of their choice". (NFB/ABAPSTAS, 1973,
That there may be difficulties in realising this is evident in the comment by Butler that, "The indications are that visually handicapped students still have more difficulty in obtaining admission to further education and professional or other courses than to degree level or equivalent studies". (Butler, 1986, p.17).

Patten also comments on the increasing numbers of students with visual impairments who make use of the RNIB's student advisory service. Traditionally this service assisted students from the RNIB's special schools, such as Chorleywood and Worcester, in following degree courses in higher education. However, Patten notes a change occurring in the nature of the students encountered by the service. He states, "Numbers continued to increase and for the first time included students coming from other schools, in some cases mainstream, and students in colleges of further education". (Patten, 1988, p.1). Lomas, also commenting on the RNIB Student Advisory Service, has written that, "The most pressing problem ... is that of numbers" and stated that, "There is some evidence that the growth has been greatest in the further education sector where student support is more consistently needed". (Lomas, 1988, p.27). The FEU has made a similar observation about the increasing need for support services in general for visually impaired students. It comments, "Demand for the service has been high ... Without this service a small number of would have continued their education away from home in specialist colleges, but for the majority, for whom leaving home and family could never be an option (many are adults with young children or other family responsibilities), this service offers not only the opportunity to continue with their education but to do so at their local college in an integrated situation with well equipped back-up support". (FEU, 1986, p.71).
Hutchinson has indicated another reason for the growth of student numbers in the area of special needs. This relates to the work of the Department of Employment in encouraging training schemes for young people with impairments. He states, "The second main provision of training has come from the manpower Training Commission through its two executive branches, the Employment Services Division and the Training Services Division. ... The Youth Opportunities Programme ... did not at the outset cater specifically for handicapped young people. ... Following pressure from many sources the scope of the provision was widened to include, amongst others, those with physical handicaps, the ESN(S), the maladjusted and those with sensory handicaps". (Hutchinson, 1982, p.12).

The terminology employed by the Department of Employment for their schemes has been subject to change over the years. In 1983 the Youth Training Scheme (YTS) replaced the Youth Opportunities Programme (YOP) and now we talk in terms of Employment Training (ET) courses. Corbett notes that, "The Training Agency (TA) has replaced the Training Commission (TC), which was formerly the Manpower Services Commission (MSC)". (Corbett, 1989). The Training Agency has since become the Training, Education and Enterprise Directorate (TEED). Even the TEED has not escaped further change. As McGinty and Fish note, "With the setting up of Training and Enterprise Councils (TECs) its role is significantly diminished." (McGinty and Fish, 1992). Fish has noted that schemes of post-16 vocational training for individuals with impairments organised by the Department of Employment present some difficulties in terms of out of date categorisation. He states that the Department of Employment use a definition of handicap, "that is based on the Disabled Persons (Employment) Act 1944 which is at considerable variance with definitions of special educational needs currently operating in education". (ILEA, 1985, p.119).
Not all such schemes of training would be carried out at further education institutions, but nonetheless, they have contributed to some degree to the increase in the overall numbers of students with special needs in this general area. It seems likely that a consideration to be found in these government initiatives is the concern to increase economic independence by obtaining employment. McGinty and Fish have commented on the social and economic cost of life long dependency. They note that post school educational and training opportunities have been promoted because, "an independent adult life is seen as an important way to reduce this cost." (McGinty and Fish, 1992, p.7).

Another factor that has emerged in the growth of numbers in this area is the increase in the number of mature students. Mansell has noted in general terms that, "About half the students in F.E. colleges are over twenty-one." (Chitty, 1991). Cooper has noted, like many other commentators, that institutions of further education have expanded to cater for students with special needs, up to the age of 19. She has also commented on the increasing numbers of such students over this age that are seeking courses in this sector. As mentioned above, the 1992 Further and Higher Education Act has to some extent taken account of this. Cooper states, "Further education is valuable, not only in offering education up to the age of 19, but also in making provision for more mature students". (Cooper, 1986, p.3). (Cooper, as Director of SKILL, took part in the lobbying operation during the passage of the 1992 Bill.) Mansell has noted that, "F.E. colleges are widely regarded as 'second chance' open access institutions." (Chitty, 1991). This 'second chance' may be for individuals who did not realise their potential in the compulsory education sector or for people who wish to change career direction. In this latter group there may well be individuals for whom disability has been a factor in their decision. McGinty and Fish have noted this
growing demand from mature students for further education. They state, "The majority of students come straight from school but the number of adults is also increasing. There is another small, but significant, group of post-traumatic disabled students often requiring a very specialised and individual response." (McGinty and Fish, 1992, p.60). This trend is also noted in the specific field of visual impairment and is included by Patten in his summary of the situation. Patten writes of, "increasing numbers, a high proportion of mature students, a growth in the number of students in further education and a decline in the proportion coming from the 'traditional' schools and colleges for the visually handicapped". (Patten, 1988, p.4).

11.6 Student Numbers.

A general pattern emerges from this review of the literature. There seems clear evidence of increasing numbers of students with special needs in the mainstream further education sector and growing demands for support services for effective integration. It is likely that such growth is connected to the general increase in student numbers in further education which in turn is related to the changing employment position. Mansell has quoted an HMI survey in 1987 which stated that, "approximately 1.7 million students attend F.E. colleges on a full time or part time basis." (Chitty, 1991). With unemployment rising in the late 1980s/early 1990s the number of applications for F.E. courses is likely to have increased as more people failed to obtain jobs on leaving school.

It is also worth noting that the numbers of students with special needs, although increasing, is not keeping pace with the growth in the general numbers of students in F.E.. McGinty and Fish have commented that compared to the further
education student body as a whole, "the percentage of young people with special needs in full or part time education after 16 is lower." (McGinty and Fish, 1992, p.37). It is interesting to note that the general figures for further education attendance in this country have been lower than in many other countries in Europe. The Organisation for Economic Cooperation and Development (OECD) have commented that, "With the exception of the United Kingdom, the participation rates of the sixteen year olds are in general very high." (Loc. cit.). Mansell, too, has noted this. He comments that for Britain, "The participation rate remains one of the lowest in Europe". (Chitty, 1991). It may be that with a lower percentage of post sixteen year olds going into F.E., and with a lower pro rata percentage of special needs students within that number, the position of such students is not quite as good as the growing numbers might indicate.

The general picture of increasing numbers of students with special needs in mainstream further education is reflected in the situation found in the field of visual impairment. At the same time it seems clear that there is still considerable demand for courses at special colleges. Chapman and Stone have described this area in terms of, "burgeoning activity and growth". They go on to describe the, "advent of colleges of F.E. for visually handicapped pupils", as evidence for this. (Chapman and Stone, 1988, p.196). It does seem that the growth in student numbers may not be necessarily at the expense of the special sector.

Some studies have attempted to put figures to these developments in order to provide a wider perspective. The NBHS survey commissioned by the Department of Education and Science, mentioned at the start of this section, estimated the total number of students with special needs in further education as 43,540. (Stowell, 1987). The numbers are
estimated and not actual because of the effect of non-returns of the survey questionnaire. The questionnaire had a 93% response rate from colleges making the estimated figures fairly reliable. In the specific field of visual impairment the NBHS survey found a total of 254 students in mainstream further education but the real number may have been marginally higher due to the non-return factor. A survey by Stockley at about the same time received a 58% return of questionnaires from LEAs and found 118 students with visual impairments in mainstream further education colleges. (Stockley, 1987). Both these surveys were conducted in 1985. It was hoped that the Stowell survey would be repeated after five years in order to assess the trend that a second set of data would provide. This has not happened. McGinty and Fish note that, "Subsequent plans to review progress five years later, originally announced by a Department Minister, have not been carried out. Such a review would be of value to planners as the percentage growth in this expanding area of provision could be determined." (McGinty and Fish, 1992, p.57).

Patten was concerned with visually impaired students and surveyed the period 1985-88. Patten's survey of further education colleges received a 74% return rate. He found that the number of students with visual impairments in further education was significantly greater that reported by Stockley or NBHS. In the year 1985-6 he found 512 visually impaired students attending mainstream further education institutions. In 1986-7 he found 684 such students and in 1987-8 he found 783. (Patten, 1988). An RNIB survey of further education colleges in 1989, with a return rate of 36%, identified 686 visually impaired students. (Cohen, 1989). A collaborative survey by NIACE (National Institution of Adult Continuing Education), RNIB and SKILL in 1992 found 523 visually impaired students at 162 colleges of further education (about 41% of the total number of
colleges). This growth in visually impaired student numbers is also reflected in the figures provided by the RNIB's advisory service. These show that in 1981 45 students in mainstream further education made use of the service. By 1987 this figure had grown to 119. (Patten, 1988). These figures seem to underpin the reported trend of expansion in the field of further education for these individuals.

The general movement towards greater integrated provision in the mainstream for individuals with special needs was noted in Part One of this thesis. This trend can be observed in the further education sector for both the general group of students with special educational needs and for the specific group of students with visual impairments. A key question that arises in this area is how effective this integrated provision is in providing the educational services that these individuals require. The next section addresses this question.

12.1 The Need for Support.

Traditionally, supported provision has been found in the separate, special sector. This has represented a measure of positive discrimination in favour of individuals with special needs which has been generally acknowledged. With the growth of schemes of integration for these individuals in the mainstream institutions, it is clear that positive discrimination should be exercised here, too, if such schemes are to be effective. Dessent has identified this area of positive discrimination as the, "major challenge for the implementation of non-segregation policies". (Dessent, 1987, p.152). In a similar way Moses has argued that, "Despite the consensus of opinion about the desirability of maximum integration and the legal imperative that requires it, success will be difficult to achieve unless there is adequate support". (Moses, 1988, p.6).

Many have written on this theme in relation to expanding provision for pupils with special needs in ordinary schools. The Warnock Report described the provision of support in terms of, "an indispensable condition for effective special education in ordinary schools."

(Special Educational Needs, 1978). Hegarty argued in 1981 that the availability of appropriate support was, "a crucial factor" in effective integration. (Hegarty et al., 1981). Hegarty has expanded this point and in a later work discussed the importance of matching, "official enthusiasm for building up special needs provision in ordinary schools" with, "due allocation of resources". (Hégarty, 1987, p.91). Adey has commented on this point, in stark fashion, that, "There must be adequate support. ... Integration cannot be done on the cheap". (Adey, 1983, p.28). This point is echoed by Hodgson. She
states that, "Our recent study suggests that integration of visually impaired pupils is not a cheap option". (Hodgson, 1985, p.37).

Moses has underlined the need for positive steps to be taken to ensure that effective education is delivered to those with special needs in the mainstream. He states, "Simply placing children in an ordinary school rather than a special school will rarely, if ever, result in their receiving the type of education they need. By definition some form of special provision is required by these pupils and if they do not attend a special school, then the ordinary school must ensure that it makes appropriate provision." (Moses, 1988, p.144). Bishop has argued in a similar way that the success or failure of an integration scheme depends on positive support. She notes, "Regular teachers require support services ... if mainstreaming is to succeed." (Bishop, 1987). In an interesting comment, Spungin has applied the "least restrictive environment" concept to this area in a novel way. He argues that, "The public school program without the proper support services and special educational personnel could then be considered the most restricted educational environment." (Spungin, 1978, p.422).

In the specific area of the education of children with visual impairment, the same perspective can be seen. Low has stated, "Responsible advocates of integration for the visually handicapped are at considerable pains to specify how the necessary help can be made available. For them, 'integration' essentially means 'supported integration'". (Booth and Potts, 1983, p.40). Chapman and Stone have also argued that effective provision for visually impaired children in the ordinary school is, "dependent" on, "the availability of resources and support services". (Chapman and Stone, 1988, p.183).
Similar observations have been made with regard to young people with special needs in post-16 provision. Hutchinson has commented on this point in relation to work preparation for young people. He states that, "Going to work and earning a living is a societal norm, as relevant to the handicapped as to the able-bodied. But these objectives can only be achieved with a measure of positive support in favour of the handicapped". (Hutchinson, 1982, p.67).
Bradley and Hegarty have argued that, "For young people with physical and sensory disabilities the vast majority of courses are potentially open", provided that the colleges make available the, "additional support necessary". (Bradley and Hegarty, 1982, p.13). The FEU have also underlined the importance of support services in the further education field. They state quite categorically that, "The success or failure of special needs provision depends more than other forms of provision on adequate support systems". (FEU, 1987).

12.2 Current Levels of Support.

Despite the importance of positive discrimination in the form of support services in this area, there are indications that such services may have failed, historically, to meet the level of demand made on them. In 1985 the Fish Report for ILEA stated that, "For many years students with disabilities have participated in colleges without supporting arrangements". (ILEA, 1985, p.112). The Report went on to state, "The need for resources to support individual students on general courses has not been taken into account. As yet no mechanisms have been established for this purpose". (Loc. cit.). Fish was concerned to maintain the principle of open access to all mainstream courses for young people with special needs and the Report
makes this clear. It states, "A lack of supporting arrangements should not prevent individuals from attending colleges or limit their choice of college". (Loc. cit.). At the same time it seems clear that the lack of support on the ground would make it difficult for some young people to follow the courses of their choice. The NBHS survey of colleges conducted in 1985 found that only 19% of further education colleges provided support for individuals with special needs. (Stowell, 1987). The survey also noted the trend, referred to earlier, that individuals in higher education were more likely to receive support than those in further education. The report noted, "Support is much more common in higher education than in further education." (ibid.).

It may well be that there has been an increase in the level of support provision made available in further education since the mid-1980s. At the same time there has clearly been a growth in the numbers of students with special needs who might wish to take advantage of this support. Clearly, support services play a critical role in the success of integration schemes and there is a continuing and growing demand for these services. This situation is reflected in the particular area of visual impairment. Cohn has commented as recently as 1989 that, "Blind students have been suffering from a lack of support services for years." (Cohn, 1989, p.62). This confirms what Lomas has reported from his examination of the RNIB students support services. He states, "The caseload is growing, and staff are placed in the invidious position of having to be selective as to which students to assist in order to ration out their time. To some extent this means 'shutting the door'". (Lomas, 1988, p.27). It seems fair to add to these comments by Lomas that the RNIB student support services have probably been the best in the field of student disability support. It simply appears to be a case of inadequate resourcing to meet the
demand. There seems to be a general picture emerging of support services attempting but failing in some areas to meet the growing demands from young people with special needs entering the mainstream F.E. colleges.

12.3 The Range of Support.

Many writers have noted the importance of effective planning for the provision of support services for individuals with special needs. The Vernon Report noted that, "many of the difficulties of assimilation can be avoided by careful advance planning." (The Education of the Visually Handicapped, 1972). In a similar way Hodgson has written, in reference to children with special needs, that, "for ... integration programmes extensive preparation is vital to success". (Hodgson, 1985). In 1987 the NFB argued that for effective integration of visually impaired children advanced planning was essential. It stated that, "Proper provision within ordinary schools requires planning so that the specialised resources may be set in place in advance so as to meet the anticipated future demands for integrated provision rather than relying on ad hoc responses to the individual children's needs". (NFB, 1987, p.19).

In the further education field, the FEU has commented that, "Teachers should wherever possible be prepared in advance, at least with information on what support services are available and can be used". (FEU, 1986, p.32). Patten's survey on F.E. students with visual impairments gave some indication of the length of preparation time that a number of colleges would welcome. He notes that, in general, "Colleges do not receive adequate notice of the arrival of a visually handicapped student", and that, "quite a few which now receive less than three months' notice would prefer to have up to six months". (Patten, 1988, p.20). An important
aspect of such planning is obviously that of assessing need. This is an area where colleges may feel they lack the necessary expertise in a wide range of disabilities and learning difficulties. This point is considered in section 13.

The FEU make the sensible point that however well planned a scheme might be there is always the possibility that some change, such as the movement of staff, may mean that everything is not ready at the start of a new college year. Looking at one integration scheme, the FEU noted that, "Inevitably, ... some teachers did not find out until the start of the new term that they had a blind student in their class". (FEU, 1986, p.32). Nonetheless, careful planning should ensure that this sort of problem is kept to a minimum and that the full range of available support services are in position in the mainstream institution for the start of courses.

This support provision for individuals with special needs in the mainstream can cover a wide range of services. Bishop in her 1986 work identified, "seventy factors associated with successful mainstreaming". (Bishop, 1986, p.940). Although not all of these factors were concerned with support services many were connected to this theme. This range of provision has been called a, "broad front" by Hegarty. He goes on to argue that it, "must include knowledge, advice and the deployment of expertise", as well as, "the provision of specific resources". (Hegarty, 1987, p.91). Clunies-Ross has written of a, "variety of sources" from which support can be derived. She includes within this description such things as, "classroom helpers, back-up teaching staff, specialist equipment, and resource materials". (Clunies-Ross, 1984, p.9). Adey has summarised the important factors under generalised headings. These she
defines as, "Adequate planning, efficient resources and teachers with commitment". (Adey, 1983, p.27).

In the specific area of the integration of children with visual impairment, Buultjens has made similar observations. She writes, "The whole process must be serviced by a sufficient number of properly trained and experienced support staff. There must be in-service training ... and account must be taken of the needs of these children in staff allocation, timetabling and provision of suitable materials and resources". (Buultjens, 1986, p.68). The Association for the Education and Welfare of the Visually Handicapped (AEWVH) have adopted a similar approach. They have stated, in discussing the integration of visually impaired school children, that, "This principle has implications of a substantial and costly nature in terms of staffing, facilities, equipment, and the curriculum". (AEWVH, 1987, p.2). Chapman and Stone have described in some detail these "implications". They note that classroom teacher in the mainstream school will need to address a number of areas including, "establishing cooperative and regular contact with the specialist advisor"; "reviewing the environment of the classroom"; "enumerating and obtaining any specialist equipment that a pupil needs"; "checking sources/supply of specialist materials"; "discussing curriculum implications"; and "making applications for in-service training". (Chapman and Stone, 1988, p.187).

In further education the "broad front" of support services have been described by the FEU. Its definition includes, "the removal of barriers to access, both physical and attitudinal"; "provision of transport"; "care assistance and personal learning support"; "additional and specialised support"; and "the involvement of other professional services working in support of adults with disabilities". (FEU, 1987). Talbot has provided another list of this range
of services. It includes, "specialist support to mainstream teachers"; "tutorial support to students"; and "the provision of induction and awareness courses for teachers in the mainstream college". (Talbot, 1988, p.56). The FEU's description of support services for visually impaired students includes, "Mobility from home to college"; "advising staff"; "producing or acquiring tactile and large print material"; "advising students"; "transcribing into and out of braille"; and "advising the examination officer". (FEU, 1986, p.53). A very full description of support services for visually impaired young people is given by McConnell. He describes support for students in America, and writes; "In-service teacher training should provide adequate information about the teaching techniques, modification of the classroom procedures and the materials that will be required of both the teacher and student. Issues such as attitudes of the teacher and student, teachers' familiarity with visual handicaps, orientation and mobility training, class size, safety provisions, curricula modification, acquisition of and training with adaptive equipment, and educational resource support must be resolved to ensure a successful placement". (McConnell, 1984, p.319).

Cooper adds another aspect to this full list by advocating the simple idea of, "asking the visually handicapped student about their particular needs". (Cooper, 1986). This 'common sense' approach to understanding the needs of a particular individual should perhaps be emphasised as it is possible for support structures to become too distanced from student concerned. It is also important that a role in the initiation of the support provision be given to the student so that some degree of control of his/her working environment is ensured. The support structure should be set up in such a way that it is possible for the student to eventually take full control of his/her own support.
arrangements. This is important to give independence to the students and to make it possible for the students to work effectively in the next stage of their education/training/career. Having found the components that make for effective and independent working, this can be carried forward into the future. For some students taking such control over their own support services can be facilitated very quickly. Others will need to be encouraged to do this. As Todd and Spragg have noted, "A very important factor will always be the student's own grit and determination." (Todd and Spragg, 1991, p.54). In the same way a direct approach to a student may well reveal that the individual does not wish to take advantage of the full range of support services that may be available. It should be an option for the individual that, "any special arrangements ... be minimised". (FEU, 1988).

This section has looked in general terms at the need for supported provision for integration schemes. There is widespread agreement that for such schemes to be effective positive discrimination in the form of support should be made available. The thesis now goes on to look in more detail at particular areas of support that have been referred to by many writers in this field as being of significance. It is important to note, however, that individual factors clearly do not work in isolation. The cumulative effect of many factors working together will determine the effectiveness of the overall provision. Bishop has commented on this point. A major conclusion of her 1985 study is that, "success in mainstreaming is a collaborative process". (Bishop, 1985). At the same time it can be helpful to look at the main areas involved but, at the same time is important not to lose this overall perspective.
13. Special Advisory Services.

13.1 Specialist Advisory Services in the Compulsory Education Sector.

Specialist advisory teachers in the special needs area have been recognised by many writers as fulfilling an important role in effective integration schemes. They can be seen to represent a part of what can be termed the human resource area. There is a danger that such practical things as the production of materials in special mediums, the provision of specialised equipment and alterations to buildings may distract attention from this area. Clunies Ross has alluded to this point when she discusses the range of special needs provision mentioned above and concludes by saying, "less tangible but no less valuable, however, is the support provided by and information gained from specialist or peripatetic staff". (Clunies-Ross, 1984, p.9). The Warnock Report was in no doubt as to the importance of such a service. It stated, "It is essential that all teachers should have ready access to advice, support the expertise of specialist teachers to supplement and complement their own efforts to meet the special needs presented by individual children". (Special Educational Needs, 1978). In 1981 Hegarty assessed the availability of specialist advisory staff as, "a crucial factor" in the success of integration schemes. He went on to stress the importance of, "effective liaison and good lines of communication" in this matter. (Hegarty et al., 1981, p.160).

In a similar way Buultjens has commented in reference to integration of children with visual impairments that, "the whole process must be serviced by a sufficient number of properly trained and experienced support staff such as peripatetic teachers/counsellors for visually impaired
children". (Buultjens, 1986, p.168). Chapman and Stone have also noted, in this specific field, the importance of, "establishing co-operative and regular contacts with the specialist advisor". (Chapman and Stone, 1988). Erwin has written categorically on this point that the, "active involvement of a certified teacher of the visually impaired is the only way for successful integration to occur." (Erwin, 1991, p.256). She goes on to emphasise the importance of a, "strong partnership between the classroom teacher and the vision consultant-teacher". (Loc. cit.). Low argued, perhaps a little optimistically, that with this specialist advice, "There should be no problem providing ordinary class teachers with the back-up support, guidance and advice they will need in order to cope with the visually handicapped child". (Booth and Potts, 1983, p.37). The range of duties to be carried out by the peripatetic teacher can be very large. Benton provided a detailed check list for the advisory teacher which covered over forty different aspects of the work. These were grouped under four main areas which were, "Assessment and Evaluation", "Supporting the Children", Consultant to the Teacher", and "Involving the Parents". (Benton, 1984, p.6). The first area covered such things as assessing functional vision; liaising with other professionals and voluntary bodies. The second area included assisting personal development; individual tuition in special skills such as braille and mobility; advising on low vision aids; and classroom support. The third area covered discussing appropriate teaching strategies; preparing specialised materials; and in-service training. The last area included establishing school/home links; involving parents in decision making; and encouraging them to provide stimulating home environments.

Hegarty's 1987 survey revealed a generally similar picture of the duties of peripatetic staff. He reported that, "The time spent in ordinary schools was fairly evenly divided
between pupils and teachers. Time with pupils tended not to be for teaching. Instead, the focus was on counselling, social skills, and the provision and management of aids. Time spent with teachers was devoted to explaining the nature of the pupil's visual impairment, helping the teacher to monitor progress and advising on strategies for teaching, classroom management, and pupils mobility". (Hegarty, 1987, p.97). The range of these services is clearly very wide and goes beyond the expected role of the mainstream teacher. The delivery of these services can be straight to the individuals involved, or, probably more commonly, through the individual's teacher. Hegarty has commented on this point. He states, "The support can be provided directly to the pupils or it can be given to teachers in the hope that pupils will benefit indirectly". (ibid., p.91).

13.2 Specialist Advisory Services in Further Education.

In the further education sector there have been similar observations about the value of specialist advisory services. In 1981 Bradley and Hegarty noted that, "The availability of support staff in colleges of further and higher education may be the critical factor determining whether individual students are able to take advantage of the increases in course provision". (Bradley and Hegarty, 1981, p.27). More recently, the FEU has clearly stated that the success of an integration scheme is, "heavily dependent on the role of the support tutor". (FEU, 1986, p.55). The same report underlined the value of obtaining expert advice. It stated, "collaboration with others with greater or different expertise and experience always consolidates the initiatives that come from within". (ibid., p.34). In the specific area of visually impaired students in further education the same points have been made. Talbot includes in his "essential criteria" for successful integration
schemes the, "specialist support to mainstream teachers from staff trained and experienced with the visually impaired" and he emphasises the importance of, "close liaison with the designated staff in mainstream college and with the tutor for the visually impaired". (Talbot, 1988, p.56).

The possible responsibilities of the tutor for visually impaired students have been listed by the FEU. They include, " - selection of courses and career implications - mobility from home to college - advising staff on procedures for obtaining tactile materials - producing or acquiring tactile and large print material - advising students on learning techniques - being available to solve day to day problems - transcribing into and out of braille - advising the examination officer". (FEU, 1986, p.53).

A similar list is provided by the NBHS study. The tutor's tasks may include, " tutoring visually impaired students; organising braille and tactile writing and diagrams; training sighted teaching staff who lecture visually impaired students; liaison with mobility officers; and a host of welfare or other services for blind students". (Stowell, 1987, p.52). The FEU report noted that the degree to which members of the teaching staff's workload was adversely affected by teaching visually impaired students, "largely depends upon how effectively they use the support tutor's services". (FEU, 1986, p.53). Clearly the FEU see the tutor's role as being of the first importance.

There is some variation in the way that specialist advisory services are delivered in the field to visually impaired individuals. The low incidence of visual impairment means that there are logistical difficulties in providing effective support in the mainstream. Hegarty has commented on this point. He states, "It should be noted that the low
incidence of visual handicap coupled with the scarcity of specialist teachers made it difficult in practical terms for local authorities to build up appropriate provision. (Hegarty, 1987, p.92). In some colleges (the minority) a member of the college staff may be appointed to carry out these duties. The Fish Report made an important observation on this. It argued that such support staff, "should be part of the Authority's services to the colleges and not necessarily counted as part of the college staffing ratio". (ILEA, 1985, p.114). In other areas the local education authority may have a peripatetic team for supporting visually impaired individuals and members of the team may liaise with local colleges who have students with visual impairments enrolled on their courses.

The former approach was first tried in 1982. German and Chance note that, "Millbrook College (Liverpool) became the first local authority further education college in the country to employ a specialist teacher of the visually handicapped ... to support visually handicapped students on mainstream courses". (German and Chance, 1989, p.52). Low could see advantages in this approach. He argued that it made sense for, "some institutions going beyond the basic level of provision in catering for those with a certain handicap where this seemed particularly sensible". (Low, 1984, p.13). In 1987 the NFB declared that their, "preferred model" was for visually impaired individuals to be in the mainstream with, "a resource centre for the visually handicapped with specialist staff as well as books, equipment, etc.". (NFB, 1987, p.21).

In the same year that Millbrook opened its unit for visually impaired students, Colborne Brown and Tobin reported that there were 80 "professionals with specific responsibilities in peripatetic services". (Colborne Brown and Tobin, 1982, p.113). Clearly, not all these "peris" would be involved
in supporting further education but a number would be expected to be assisting in this area. There has been an expansion of the peripatetic service in most local education authorities since the implementation of the 1981 Education Act. A survey in 1988 of local education authorities (74% response) showed that all the responding authorities operated such general support services. The survey went on to show that 66% of these authorities operated, "a specialist support service for the visually impaired". (Moses, et al., 1988). The organisation of the advisory services can vary from authority to authority. Some (usually larger) authorities have advisory teachers specialising in the post 16 year old age group, while others have teachers who cover the whole age range. Some authorities have specialists in sensory impairment in the post 16 year old area and some have specialist teachers in visual impairment for these students. Chapman and Stone have reported these developments. They note that, "Large authorities, or ones with a well-established service, may have several qualified teachers for visually handicapped pupils who are able to specialise in specific areas of support". (Chapman and Stone, 1988, p.195). There are advantages in each of these methods of service delivery. The college based service can build up a close relationship with other college staff and in this way liaise easily. On the other hand, the wider peripatetic approach has the advantage of having a close knowledge of the individual as he/she progresses from preschool age, through the education system. It is sometimes the case that the support structure in a particular location can be a combination of unit based and peripatetic provision.
One aspect of the work of specialist advisory teachers is their contribution to in-service education and training for mainstream staff. Many have written on this subject and expressed the view that this area is one that requires a good deal of consideration. The next section looks at this question.
14. Teacher Training.

14.1 In the Special Education Area.

A recurring theme in many works on the integration of special needs provision is the need for some form of training for mainstream teachers to equip them to teach individuals with special needs effectively. Although the 1981 Education Act makes no specific reference to this subject, the associated DES Circular 1/83 clearly demonstrates the government's recognition of the importance of in-service training. It states, "The Secretary of State for Education and Science expects that the LEAS will encourage in-service training to assist teachers in recognising and meeting special educational needs". (DES, 1983). That such a need for teaching training exists has been well documented.

In 1980 Hegarty had expressed his concern over whether teachers in ordinary schools did have the necessary knowledge and training to teach effectively in this area. He posed the question, "You may want to enquire if they have a sufficient understanding of handicap and an appropriate teaching approach". (Hegarty, 1980, p.9). The next year a survey for the NFER of over 200 teachers showed that teachers themselves shared this concern. The survey results indicated that, "The great majority of these teachers saw it as important to have specialised knowledge of handicap when dealing with pupils with special needs". (Hegarty et al., 1981, p.151). The survey findings went further and stated that, "Teachers recognised that their teaching competence as far as pupils with special needs were concerned was limited" and that, "Teachers were insufficiently informed on the educational implications of given handicapping conditions and needed to develop their awareness of pupils' potential".
The survey went on to examine the availability of training for teachers concerned to extend their professional expertise in the light of expanded integration of special needs education. In its findings it speaks in terms of, "The sheer absence of relevant training for teachers, ancillaries and other staff". (ibid., p.236). In its conclusions the study makes clear the nature of the problem and the need for both initial training and in-service training to address the situation. It states, "Integration raises new and distinctive problems of training. ... In the long term the answers must be sought in initial or early in-service training. If a majority of teachers are likely to encounter pupils with special needs in the course of their teaching career, initial teacher training must take explicit account of this." It further argues that, "Even if initial training of teachers, ancillaries and other staff was revolutionised overnight there would still be need of training for staff already in post". (ibid., p.210).

This NFER study's findings have been reinforced by others. In 1984 Clunies Ross stated, "Many ordinary teachers teaching children with special needs in integrated settings have found that it is of immense value to have that extra support and confidence which comes from a knowledge of the educational implications of a child's special needs, an understanding of individual specific medical requirements, together with information about how to acquire and - and how and when to use - particular resources and pieces of equipment". (Clunies Ross, 1984, p.9). The situation on the provision of training for mainstream teachers showed little improvement on the position indicated by the NFER study published three years earlier. Clunies Ross states, "At present the majority of teachers in mainstream schools have received no initial or in-service training for teaching pupils with special needs". (Loc. cit.). The Fish Report,
published in 1985, again reinforced the importance of training for teachers who were expected to teach individuals with special needs. It recognised that, "there is a continuing need to provide opportunities for staff of all kinds to increase and update their skills, ideas and knowledge in specific areas. ... This will include attention to the educational needs of children and young people with specific disabilities such as visual or hearing impairment, and of those with significant learning and behavioral difficulties". (ILEA, 1985, p.129). The Fish Report also noted that there was a need for administrators to be more fully aware of the special needs area. It stated, "The needs of senior management should not be neglected and appropriate courses should be provided for them". (ibid.).

As recently as 1987 Hinson has written in more general terms of, "a woeful lack of training", and of the need for in-service training being "immense". (Hinson, 1987, p.240). Hinson goes on to describe the situation in more detail. He notes, "New teachers are entering the profession with differing levels of awareness and knowledge about special educational needs; there is a teaching force which has received little or no input concerning special educational needs in their training; and there is a large number of teachers with responsibility for special educational needs in ordinary schools without any specialist training". (Loc. cit.). The effects of this lack of training could be serious. Boldt has argued that, "the role of the mainstream teachers is decisive. Lack of preparation and insufficient special education frequently lead to insecurities which find their expression in rejection." (Boldt, 1992, p.65).

In the specific area of integrated educational provision for pupils with visual impairments the same general pattern emerges. In 1977 the Jamieson Report noted that mainstream teachers, "complained about the lack of advice concerning,
for instance, the use of low vision aids; the importance of lighting conditions; the fact that residual vision could not be 'used up'. (Jamieson et al., 1977, p.183). Jamieson also noted that, "when medical details were passed on, it was apparent that teachers had not always fully understood and internalised their implications". (Loc. cit.). The report also commented on the 'low expectation' dimension mentioned above. "The teacher also has to determine what demands can legitimately be made on the child with impaired vision. If the teacher is unsure, there is perhaps a natural tendency to 'play safe' and lower expectations". (ibid., p.185). These findings clearly pointed to the need for teacher training to improve the effectiveness of educational provision for visually impaired children in mainstream schools. Jamieson concluded, "Teachers in ordinary schools with visually impaired children in their classes, represent a group of key participants in almost any scheme of integration. ... We found a pronounced consensus among this group, spread across many schools, that there were insufficient sources of information and advice. ... Without some basic instruction the teacher with a visually impaired child is sustained only by popular knowledge - which is hardly sophisticated". (ibid., p.221).

Hegarty's view in 1981 is very similar to that expressed by the Jamieson Report. Hegarty argued that, "Some forms of special need were seen as quite removed from the ordinary teacher's experience, and if teachers were to cope with them they needed a good deal of specialist support. Thus teaching pupils with sensory impairments ... required more explicit guidance and support". (Hegarty et al., 1981, p.153). A survey of parents by Colborne Brown and Tobin in 1983 revealed that there was significant concern among parents of children with visual impairment integrated in ordinary schools about the lack of specialist knowledge on visual impairment. They reported that, "35% of those
responding expressed strong dissatisfaction" on this point. (Colborne Brown and Tobin, 1983, p.171). Comments from individual parents illuminate some of the points made above. "The ordinary teachers don't realise the problems that can arise"; "More training should be given to teachers"; "The staff are very imaginative but have no special training for the visually handicapped". (ibid., p.172). The authors conclude that, "However well-motivated and caring the teachers in the school may be, they cannot, without specialist training be expected to provide an education that will realise the visually handicapped child's potential". (Loc. cit.).

In 1984 Benton considered that it was essential for the successful integration of visually impaired children that teachers in ordinary schools acquire, "a knowledge of the problems of visual handicap". (Benton, 1984, p.5). Hodgson, in 1985, reached a similar conclusion and argued that to ensure effective integration for visually impaired pupils, "LEAS will need to ensure effective in-service training for mainstream teachers". (Hodgson, 1985, p.35). This point of view was implied by Cropp in the same year when stating, "The classroom teacher cannot be expected to have the knowledge of a specialist". (Cropp, 1985, p.51). In 1988 Chapman and Stone commented that, "In practical terms, the contribution of training is a crucial one in providing teachers with strategies to meet the individual needs of the visually handicapped in their classes". (Chapman and Stone, 1988, p.187). These writers clearly reinforce the importance of staff training in the particular field of visual impairment. There are also indications, here, as in the general special needs area, that such training needs to be continually expanded to meet the increased demands of developing integration.
14.2 F.E. and the Special Education Area.

Further education seems to share the same need for the expansion of teacher training in the special needs area. Indeed it could be argued that further education is in even greater need. This is because of the fact that many lecturers have no formal teacher training at all. Barnes has noted that, "Teachers in tertiary education, whatever their level, are not required to have a formal teaching qualification, and many enter the profession straight from industry, commerce or university. Nor is teaching special needs an essential component of teacher training courses geared towards FE". (Barnes, 1991, p.60). Despite this situation many writers have commented on the importance of such special needs training. In 1979 Dixon and Hutchinson, writing about further education and handicapped students, argued that, "Without understanding and awareness on the part of all members of a college staff, the most careful planning of integration into normal classes is unlikely to be successful". (Dixon and Hutchinson, 1979, p.67). They added an important and pertinent point that, "although it is easy to be daunted by lack of appropriate accommodation and equipment, human resources are of prime importance". (ibid., p.108).

In 1981 Bradley and Hegarty, addressing the "human resources" area, stated that, "Initial and in-service training for all personnel concerned with young people with special needs is in urgent need of improvement". (Bradley and Hegarty, 1981, p.24). They noted that developments in this field in the further education sector were generally behind such development elsewhere. They commented, "While many of the issues involved are common to teachers in all sectors, perhaps the greatest problems are now being faced in the colleges of further education, where the trend towards integration is only now beginning to emerge". (Loc.
cit.). In 1982 Hutchinson made similar observations when stating, "If the best use is to be made of post-16 education by handicapped young people, initial and in-service teacher training courses have to equip staff to cope with these new students". (Hutchinson, 1982, p.21). Hutchinson also noted the increase in the numbers of such students. He stated, "increasing numbers of these young people with a wide range of different handicaps are opting for ordinary or modified courses". (Loc. cit.). In the same year Bradley and Hegarty commented again on the, "recent phenomenon" of young people with special needs at colleges of further education. (Bradley and Hegarty, 1982). In 1984 McConnell noted in particular reference to young people with visual impairments that, "In-service training ... prior to placement of a visually handicapped student ... is essential". (McConnell, 1984, p.320).

In 1985 the Fish Report looked at the further education institutions in London (amongst other things) and collected evidence on the question of staff training for students with special needs. The Report states, "All colleges which submitted evidence stressed the need for altered initial teacher training and on-going in-service education". (ILEA, 1985, p.114). The Report made the observation that, "Only a tiny minority of teachers have specialist training, few have any experience and many, understandably, are reluctant to take on work for which they have no preparation". (Loc. cit.). Cooper, producing a college guide for the FEU on special needs provision in 1986, noted that more teacher training was needed and that, in particular, "Staff should receive training in the identification and assistance of students with special educational needs". (Cooper, 1986, p.11). Another publication from the FEU in the same year made these points quite clear, stating that, "the pressing need for initial and in-service training for F.E. staff in relation to special educational needs is well known. With
the increasing numbers of students integrated into mainstream provision that need becomes even more pressing". (FEU, 1986, p.32).

The document also stated that, "Many teachers are untrained, uncertain and inexperienced when they begin in this field". (ibid., p.v). They further argued that, "Staff enthusiasm and commitment, whilst vital, are not enough; support and assistance in developing an extended range of professional skills are required as well". (Loc. cit.). The FEU singled out the danger of underestimating ability levels as an area of particular concern. They note, "The deeper insight into individual learning difficulties that staff develop in order to teach these students is usually complemented by an appreciation of how easy it is to underestimate their abilities". (Loc. cit.). Corbett graphically describes what can happen in further education when the necessary training is not in place. She refers to an integration scheme for students with hearing impairments. "The lecturers seemed reasonable people and had originally been keen to help." However, she then goes on to note, "They thought they had been given an impossible task; they felt inadequate as teachers and they needed help. They also had a fear of the unknown." (Corbett, 1989, p.28).

The NBHS Report of 1987 underlined the growing need for staff training in response to the increasing numbers of young people with special needs choosing the integrated further education option. The NBHS simply stated, "The more special educational need students the more training". (Stowell, 1987). In 1988 the FEU restated its arguments. It again noted, "A special needs programme cannot work effectively simply on goodwill: it must be supported by a properly coordinated policy of staff development". (FEU, 1988). German and Chance have also noted from their direct experience in Liverpool of the importance of courses of in-
service training, "arranged regularly for tutors who have visually handicapped students in their classes". (German and Chance, 1989, p.53). In the same way Poole's survey of Welsh colleges in 1990 stated that, "replies from further education establishments indicated an awareness of the need for staff development across the broad range in the area of disability." (Poole, 1990, p.26).

The need for staff training in the special needs area has been clearly indicated by these writers for the reasons stated above. Some have noted, however, that schemes of staff training may have an important impact on the issue of staff attitudes towards the area of special needs education generally.

14.3 The Importance of Attitudes.

Hegarty has made a general point, which many would agree with, concerning attitudes. He has written of the importance of, "positive open attitudes and realistic perceptions" for effective integration and argued that, "a major goal of integration is attitudinal". (Hegarty et al., 1981, p.456). Hutchinson adopts a similar view in relation to further education provision for students with special needs. He states that, "staff and student attitudes need to be positive if the exercise of involving handicapped students in further education is to be successful". (Hutchinson, 1982, p.20). In a similar way Low has written about the importance of, "improving provision for the handicapped" by, "improving attitudes" and of the need for, "flexibility and sensitivity of attitudes" in post secondary education. (Low, 1984, p.13).

In the specific field of visual impairment, Bishop noted that her survey results showed that, "acceptance was a
component of three of the top-ranked variables for successful integration". (Bishop, 1987, p.211). Todd, also writing about visual impairment, has written of the, "the vital importance of positive staff attitudes." (Todd, 1991, p.243). James, writing in the same field, stated, "One important ingredient in ensuring successful integration has to be the attitude of teaching staff and others who will work with visually impaired students." (James, 1992, p.195). This idea that positive attitudes towards individuals with special needs is a significant factor in successful integration has been linked with the notion that teacher training can help promote such positive attitudes.

Research into staff attitudes towards individuals with special needs has revealed some interesting results. Much of the early research was carried out in the USA. A study by Gickling and Theobald (1975) indicated that a large majority of teachers did not feel that they had the necessary competence to deal with children and young people with special educational needs. Harasymiw (1976) wrote of "Underlying social biases" when discussing teachers' attitudes to exceptional children. Reviews of studies by Alexander and Strain (1978), Horne (1979) and Baker and Gottlieb (1980) indicated that mainstream teachers generally had a negative perspective on integrating pupils and students into their classes. A study by Tobin (1972) on the attitudes of experienced teachers and teachers undergoing training, towards teaching children with special needs revealed similar conclusions in this country. Jamieson (1977) arrived at the same view when considering visually impaired pupils. She states, "Teachers' attitudes and their knowledge or ignorance about visual impairment may affect the integrated pupil's 'success' in school. Staff in ordinary schools are often unaware of how best to help a
child with a severe vision loss, and the need for more information and advice seems imperative". (Jamieson et al., 1977, p.189).

More recent research, however, has indicated a more optimistic picture. Hegarty noted that much of this early research asked teachers the hypothetical question of what their reaction would be to teaching individuals with special needs if they were required to do so. Little of it was based on teachers' actual experience. Hegarty's survey (1981) of nearly 250 teachers in England and Wales involved in integration schemes was based on such experience. Hegarty comments, "The questions were about real pupils: The distinction is fundamental since it is only when confronted with teaching or dealing with actual pupils that teachers' real attitudes emerge plainly". (Hegarty et al., 1981, p.458). This survey found that, "attitudes towards pupils with special needs in the integration programmes we studied were generally positive, somewhat more so than the standard literature on mainstreaming might suggest". (Ibid., p.478). The survey also indicated, "Initial reactions were commonly negative but these generally changed and the vast majority endorsed the integration programme in their school". (Loc. cit.).

Hegarty's findings have been reinforced by other studies. Adey noted that as staff contact with children with special needs increased prior to the start of an integration scheme, "the staff became committed to the integration and so enthusiastic about the project". (Adey, 1983, p.28). In 1985 Croll and Moses, in a study of over 400 teachers, noted that by combining teacher training on integration with the experience of teaching pupils with special needs it was possible to make significant progress in this general area. They write, "One of the most important things that can be done ... is to link training with an increased opportunity
to respond to children with special needs in mainstream settings. Teachers' attitudes towards children with special needs becomes markedly more positive as a result of their having the opportunity to work successfully with such pupils". (Croll and Moses, 1985, p.56). Interestingly, they also commented that, "the differences are the most extreme in the case of sensorily-handicapped pupils, where, in the case of both pupils with hearing impairments and of pupils with sight impairments, the difference between the percentage of teachers giving favourable reactions who have had experience and the percentage giving favourable reactions who have not is of the order of 20%". (Loc. cit.).

Some educationalists have noted the importance of an understanding of some of the social implications of visual impairment. This can have a marked effect on the level of positive staff attitudes. The fact that sighted individuals are used to eye contact and appropriate body language responses for fully effective communication is an important consideration to bear in mind when working with visually impaired people. Davies has written about the difficulties of an unprepared mainstream teacher who, "could not cope with the absence of eye contact and responsive facial expressions." (Davies, 1992, p.242). She went on to develop the argument that people with no experience of visual impairment are, "puzzled and sometimes affronted by the lack of appropriate response". (ibid., p.243). Clearly staff with experience of teaching visually impaired individuals will be prepared for some of these social implications of visual impairment. Moses turned to this theme of the prior experience of teachers in 1988 and commented in relation to visual impairment that, "class teachers ... are more willing to accept pupils with a particular special need when they already have experience of providing for such a pupil. Because visual impairment is relatively uncommon, however, class teachers are unlikely to
have had the requisite experience and feel that they are not equipped to teach such pupils". (Moses, 1988, p.116).

In the field of further education this same pattern has been noted. McConnell, writing of his American experience commented, "Blindness or severe visual impairment is a low-incidence handicap; most teachers are unfamiliar with its implication, and therefore approach it with unrefined beliefs, ideas, and emotions. These generalised attitudes change slowly with more experience, understanding, and information about the functional implications of a visual handicap". (McConnell, 1984, p.319). The FEU has commented in a similar vein that, "meeting the students can often go a long way towards removing misapprehensions and reducing anxieties". (FEU, 1986, p.33). It seems clear that staff attitudes can play an important part in ensuring or minimising the effectiveness of schemes to integrate individuals with special needs into mainstream settings. The studies reviewed above seem to indicate that teacher training can do much to significantly change teacher perceptions of individuals with impairments, provided that such schemes involve opportunities for actual teaching contact with these individuals. Positive approaches can be encouraged in this way. Bishop comments, "Since attitudes appeared to be important components of success for visually handicapped students in the educational mainstream, it seems appropriate to ascertain positive and receptive attitudes among educators". (Bishop, 1986, p.945). It would seem that teacher training involving contact with students with special needs could be an important factor in ensuring such, "positive and receptive attitudes". One aspect of teaching individuals with visual impairments that can cause prospective teachers concern is the question of preparing materials in a specialised medium in which they have no direct experience. The next section looks at this area.
15. The Preparation of Materials.

15.1 Implications for Teachers.

Some writers have commented that the disciplines imposed by the teaching of individuals with special needs can have beneficial effects over the whole range of the teacher's workload. In 1986 the FEU commented that, "Integrating these students into a college or into an LEA provision brings satisfaction and mutual benefits to the providing institution as well as to those students". (FEU, 1986, p.v). Later, the FEU commented in more detail on some of these "mutual benefits. "It was instructive to note that the skills teachers developed for this work, e.g. closer attention to detail, careful preparation of tasks and teaching aids" were of value to their work throughout the college. (ibid.).

On the other hand, for many busy teachers this extra workload might tip the balance against favouring expanding integrated provision. Some writers, when referring to the attitudes of teachers to individuals with special needs, have made the important point that associated increased workloads can have a negative effect. This could reduce the effectiveness of schemes of integrated provision. The Fish Report noted that, "When students with physical, sensory, emotional or learning difficulties are integrated into general college courses, their presence almost always gives rise to extra work". (ILEA, 1985, p.114). Cooper has noted in a similar way that, "Courses that include students with special needs almost inevitably require more preparation than regular courses". (Cooper, 1986, p.19). In the specific field of visual impairment, the FEU have written that, "The willingness of staff to accept visually handicapped students in their classes is, of course,
affected by any extra workload it entails". (FEU, 1986, p.53). Cooper gives a telling example of this when she argues that, "getting hold of a braille version for a blind student inevitably takes longer that just running off thirty copies on a machine". (Cooper, 1986, p.19). It is likely that Cooper is in fact underplaying this point.

It seems clear that it is necessary to reduce to a minimum these extra demands imposed on teachers by the presence of students with special needs if integrated provision is to succeed effectively. The Fish Report urged that the implications for the mainstream teachers should be acknowledged in this respect. It argued that, "If the Authority (ILEA) in pursuit of its Equal Opportunities Policy is urging colleges to accept their responsibilities towards students with special needs, it must acknowledge the additional work this may involve for staff. The resource implications in terms of time, skills and other resources must be recognised". (ILEA, 1985, p.114). For some teachers it is the need to prepare materials in the appropriate medium for students with special educational needs that presents the major factor in any increase in workload. This is where support structures have often been needed to ensure effective integrated provision. CERI noted that, "The thrust towards integration has, in recent years, been most obvious in respect to those with physical and sensory disabilities. Progress has been dependent on adequate supporting services". (CERI, 1983, p.29). However, Bradley and Hegarty noted in 1982 that the support services for these two particular groups were not always necessarily in place. They stated that, "The provision of special study materials and equipment to improve access to the curriculum for students with physical and sensory disabilities is not common throughout the further education sector". (Bradley and Hegarty, 1982, p.14). While it is the case that support services have been improved since that time it is also true
that the number of students needing to use such services has increased considerably. What is clear is the need that mainstream teachers have for assistance in effectively providing access to their courses for students with special needs.

15.2 Implications for Teachers with Visually Impaired Students.

For students with visual impairments a primary need in terms of access to the curriculum is for the provision of a service to cover the production and transcription of materials in the appropriate medium - including braille, large print, tape, tactile diagram, and enlarged print diagram. Low has described such a service. "Each centre would ... have the necessary equipment and materials, including books and materials in braille and large print, and the resources to produce and duplicate them". (Booth and Potts, 1983, p.36). In describing an integration scheme for visually impaired students, the FEU noted that it was helpful for support staff to meet teachers and to gather materials to be brailled in advance. "These meetings took place in the summer term in preparation for courses starting in September". (FEU, 1986, p.32). Stowell has written of the importance of providing support service for, "organising braille and tactile writing and diagrams" and that, "in most instances transcription is necessary". (Stowell, 1987, p.52). German and Chance emphasise the importance of, "specialist support tutors, who can transcribe work into braille, enlarge handouts, and arrange for materials to be taped". (German and Chance, 1989, p. 53).

Support services like these would help to ensure that materials were available to the visually impaired students at the same time as other students received their course
notes, reading lists, and assignments. At the same time it should be noted that this may not always happen, given that support services may on occasion be stretched too far. The FEU recognised this possibility when describing an integration scheme. It states that, "The teaching staff are generally enthusiastic and cooperative, although there have been instances when work has not been prepared in time for a lesson. ... this is probably inevitable". (FEU, 1986, p.55). The FEU also recognised that even with effective support services available to mainstream staff it did not mean that all the load was thereby passed to the support team over work preparation. The FEU writes, "Providing the support staff with the following week's teaching materials so that it can be prepared in tactile form involves staff in another element of lesson preparation". (ibid., p. 53). It is also important that students can make and refer to notes effectively. Butler has noted the importance of providing students with, "information and advice on efficient methods of note-making". (Butler, 1979). This may involve some educational technology in the form of taped notes, braille or electronic braille notes, portable computing or it may simply be large handwriting with a suitable thick felt tip pen. Whatever form it takes it can be a fundamental factor in student progress.

Another primary need for visually impaired students is for an effective reading service. Stowell has explained the importance of such a service. He noted that, "In most instances students unable to read print are unlikely to find all their study materials available in braille or on tape, hence the need for reading assistance". (Stowell, 1987, p.52). Butler has written in terms of, "The greatest problem for most visually handicapped students is the shortage of academic texts in braille and on tape". (Butler, 1979, p.35). He noted that it was impossible to generalise how much assistance any one student might need.
"The amount of reading assistance required varies considerably according to the nature of the subject being studied and the amount of reading the student can undertake independently from print, braille or tape". (ibid., p.34). In connection with this point he advocated the importance to the visually impaired student of, "the advance provision of reading lists". (ibid., p.36). He also noted that there were advantages, "in having one or two regular readers, preferably with a knowledge of the subject involved". (ibid., p.35). There is much to be said for fellow students being employed, and paid, as readers. They should have a working knowledge of the subject area; they are likely to be of the same age group with the potential social advantages this can bring; and it can help the integration process generally for a visually impaired student to have the ability to improve the income level of a fellow student! Butler went on to argue that due to the general problems visually impaired students were likely to have in getting and reading the necessary texts, "shortage of time is usually their second major problem". (ibid.). This point was reinforced by Stowell who argued that, "extra subject teaching or tutorials" were, "particularly helpful". On a related theme, Stowell adds, "The particular difficulties, and stresses, of studying as a visually-impaired student may call for extra counselling". (Stowell, 1987, p.53).

College libraries can do much in the general reading area for visually impaired individuals. Photocopiers could be utilised. Machines such as CCTVs could be sited in the library area. Reading machines and tape players could be provided. Cooper has commented that, "College libraries can be helpful in offering extra services (e.g. free photocopying, enlarged photocopies). Library staff may also be helpful in locating a place where visually handicapped students can study without disrupting others when using machines to study". (Cooper, 1986, p.51). Texts in
specialist media could be built up. Links with specialist facilities can help provide a more effective library service for visually impaired individuals. The FEU report on an integrated college scheme noted in this regard that, "the College is a member of all specialist libraries for the visually handicapped". (FEU, 1986, p.69). This seems be an important link which has the clear advantage of making available material which has been prepared in one college for use over a wider area. It could also take some of the pressure off a college library in that there would be other professional college librarians within a supportive network to refer to when necessary.

15.3 Implications for Examinations.

Examinations are an area mentioned by many writers as a significant aspect of support services. Cooper has noted in reference to exams that, "if arrangements are not made well in advance, studying can be wasted because of a lack of resources". (Cooper, 1986, p.51). Stowell has reported that this point has been well taken by many institutions. He writes, "Many colleges and examining bodies now accept the need to compensate for the restrictions imposed by handicap, including the slowness in reading through papers, in reading back what has been written or dictating to an amanuensis". (Stowell, 1987, p.53). Butler has noted on the subject of an amanuensis that, "the amanuensis must be an intelligent person who is able to write at a reasonable speed, and in the case of a technical or scientific subject should ideally have a good working knowledge of the subject". (Butler, 1979, p.38). Patten's survey of colleges of further education noted that the colleges made "special arrangements" in relation to examinations for visually impaired students which included, "extra time", and "enlarged or brailled papers". (Patten, 1988). Cooper has
listed a number of ways that might be used to record answers in an examination. "Typing, using a word processor, speaking into a tape recorder, getting someone to take dictation of the answers, writing in braille for later transcription, are all possibilities". (Cooper, 1986, p.51). Cooper also explains that if a student is using any of these alternative methods, "staff will need to contact any external examining body if there are any changes in arrangements". (ibid., p.40). German and Chance make a similar comment on this administrative point when they emphasise the importance of, "liaising with examining boards to make appropriate arrangements". (German and Chance, 1989). Butler advised that it was necessary to, "start discussions about exam procedures as early as possible". (Butler, 1979).

There seems no doubt that the provision of materials in the appropriate medium for visually impaired individuals needs to include the examination dimension. This in turn means that full contact and negotiation with the examining body be undertaken. Clearly a support structure needs to reduce the additional workload that this would represent for the mainstream teacher. The area of specialised mediums for individuals with special educational needs has been a focus for new technology, particularly micro-electronics. This is examined in the next section of this paper.
16. Support Technology

16.1 Technology and Visual Impairment.
As discussed in Part One of this paper, technological research, and in particular research in micro-technology, has an important and expanding role in the general area of education and training of individuals with special educational needs. In many ways the specific area of access technology concerned with visual impairment has been to the forefront in the use of such equipment. Clunies Ross has made an interesting comment on the role of modern equipment in the integrated setting. This is that such equipment aids the teacher as well as the pupil because it eases the educational process. She comments in writing about individuals with special needs, "Any items of equipment which enables them to participate more easily in mainstream education support both pupil and teacher". (Clunies Ross, 1984, p.10).

Many writers have commented on the value of modern equipment. Scott writes of, "New technological developments" that, "enable visually impaired students to function more effectively in the regular classroom". (Scott, 1982, p.185). In a similar way, Hutchinson notes that, "Modern technology has provided a wide range of aids and equipment which can be used in the education and training situations". (Hutchinson, 1982, p.71). The Fish Report looked at this question and stated clearly that, "Visually handicapped ... students need aids and equipment". (ILEA, 1985). Lomas, also recognising the importance of technology in this specialised area, has written of, "the growing importance of special aids" to the education, training and employment of individuals with visual impairments. (Lomas, 1986, p.32). The FEU have also argued in a similar way that, "implementation of the curriculum may increasingly have to
exploit the new technology". (FEU, 1987). In 1989 Corbett made much the same case when she stated, "The use of new technology can offer access to a mainstream curriculum and ease the experience of integration." (Corbett, 1989, p.29). Commenting on future developments and expansion in this area of special needs, Hegarty notes that, "One safe prediction is that technological aids in general will be more widely available in the future". (Hegarty, 1987, p.185). Some may find this view overly optimistic given the resource implications of an increase in budget allocations for this purpose. A difficulty in this area is the cost of specialised equipment. Due to the relatively small size of the market costs are significantly higher than for equivalent machines for sighted use. "Manufacturers say the market is small, even worldwide, so prices are high". (Fisher, 1989). For example, a soft braille display for a PC can cost upwards of £4000 (1992 prices). Other equipment such as portable braille electronic notetakers can be bought for under £1,000 (1992 prices) but are far less powerful and have far fewer facilities than comparably priced or cheaper mainstream products. Adapting readily available mainstream equipment may be a better route to follow for the majority of visually impaired students.

Another important aspect of mainstream products is that they have a general acceptance and recognition in the mainstream environment. For example, in a further education college many, if not all, students would readily acknowledge the usefulness of this type of equipment for any student. Other students will have desktop computers at home and some may have laptop machines. Portable computers are recognised as a valuable tool for business and as such have a status which is widely recognised. Indeed, the use of this technology can be seen as a good preparation for a way of working in future employment. Scadden has noted that there was, "much to gain from the initiating of activities to promote and
facilitate use of computer and sensory aid technology by blind and visually impaired individuals in the performance of educational and employment activities ... in the future." (Scadden, 1984, p.400). Similarly, Cain and Taber have noted with respect to disabled people that, "As advanced technologies come into general use, one's ability to effectively use this technology as a daily communication and information processing device will determine in good measure how well one will be able to function in the twenty first century." (Cain and Taber, 1987, p.55). The profile of adapted mainstream technology is very different to that of discrete special equipment used only by individuals with special needs. There may well be advantages in using mainstream products other than the cost factor. Support services designed to ensure effective integration certainly need to recognise the importance of being fully aware of the range and value of available products. This can be difficult for the specialist in a field that changes so rapidly, and virtually impossible for the mainstream teacher. Cooper has made an important point when she refers to the dangers of selecting the wrong product. She states, "Because of the vast range of available equipment, assessment of needs and resources is essential to avoid expensive mistakes". (Cooper, 1986, p.39). It seems clear that specialist input is necessary here for the assessment and selection of appropriate technology.

An important point to note here is that the individual should be able to try out the equipment before any binding decisions are made. Ideally this should be for an extended period. Dayan has argued that, "the student should be given the chance to assess the equipment on loan for him/herself." (Dayan, 1989, p.12). Another consideration to keep in mind is that needs can change over time. This is clearly so in the case of many students with visual difficulties. Their level of vision may well not be stable. Improvements or
deteriorations in sight levels will have important consequences for the type of technology that will be best suited to them. At a simple level, for example, it might be necessary to move from character enlargement to voice synthesis. The range of equipment is also changing at a very fast rate. The best solution to any particular problem will be influenced by relevant technical innovations as they appear. Broadbent and Curran have noted, "assessment is a continuous process. Over a period of time individual needs and skills may change as well as the enabling technologies." (Broadbent and Curran, 1992, p.2).

A number of writers have argued that it also necessary that teaching staff be more fully acquainted with the technology. Hutchinson noted that, "the dissemination of information on these aids is limited". (Hutchinson, 1982, p.71). McConnell's view was similar. He stated, "Aids developed specifically for the visually handicapped are numerous. Any new aids should be clearly explained and its use specifically taught to both teacher and student to ensure proper usage". (McConnell, 1984, p.322). Hutchinson adds that, "It is also important that training in the use of such aids is given prior to the commencement of a course". (Hutchinson, 1982, p.71). The FEU has also urged that the staff training aspect of the introduction of new technology should be recognised. It states, "Support systems ... require an increased use of new communications technology but also require a wider approach to staff development". (FEU, 1987).

At the same time it is necessary to avoid the over simplistic view that computerised aids remove all barriers to learning for these students. Fetton has warned against, "the temptation to assume that technology can solve all the problems of visually impaired pupils". (Fetton, 1988, p.13). Broadbent and Curran have argued in a similar way
that, "there must be support beyond the provision of equipment and devices". (Broadbent and Curran, 1992, p.2).

16.2 The Range of Technology and its Implications.

Any list of appropriate equipment is bound to be out of date very quickly. It is perhaps more useful to list the types of modern technology that are available.

For some students with residual vision closed circuit televisions (CCTVs) are used to enlarge work materials on a screen. There can be problems connected with screen glare for some visually impaired users which can make standard equipment difficult or even impossible to use. A non-glare machine has recently been introduced which has overcome this particular problem. For many visually impaired individuals CCTVs are invaluable. They provide precise control over the size of the enlargement and produce a clear image with good contrast. CCTVs can be obtained with monochrome or colour screens and can have a range of facilities such as auto-focus and split screen to provide two images simultaneously. One of the two split screens can be linked to a computer. This makes for greater efficiency when, for example, inputting data read from printed material.

Another way of enlarging text is by use of the photo-copier enlarger. This is very commonly used but can often be overlooked in lists of this type because of its non-specialist nature. There are disadvantages which are mainly connected to the size of the A3 output that is often used. In fact, it is not necessary to use these large sheets and effective work can often be done by enlarging text onto standard A4 sheets. Best has noted the important role played by these machines in special environments. He states, "Enlarging photo-copiers have become increasingly
popular during the 1980s and are now standard equipment in all special schools for the visually handicapped". (Best, 1992). They are certainly widely used in mainstream environments, too. In the author's experience the danger here is that the mainstream teacher can have an over-simplistic view that the needs of any visually impaired student can be met by such photo-enlargement.

The main type of equipment used by individuals with visual impairments is the computer. Computers can be adapted for use by visually impaired individuals in a number of ways. Access is gained by three main methods or combinations of them. The characters or areas of the screen can be enlarged; voice synthesis can be used; or a soft copy Braille display output utilised. Not all computers can be accessed in these ways. Access is normally only possible with Apple Macintosh systems or IBM/IBM compatible computers running on the industry standard DOS operating system. An exception to this is the pioneering BBC computer which the Open University originally used to provide visually impaired students with access to their courses. Large character display, but not voice synthesis, is also available on the low priced PCW range from Amstrad. Todd has called this, "a breakthrough in cheap computing" for some visually impaired users. (Todd, 1992a). For those with sufficient residual vision to use the system (which is basically for wordprocessing) it is the lowest cost option.

Computers for visually impaired individuals fall into two main types - Braille input and QWERTY keyboard machines. The Braille input machines have the huge advantage over traditional Braille approaches of having Braille to print translation programmes which mean the services of a transcriber are not needed. A Braille based student can now independently present his/her work. In other words the mainstream teacher does not need to read Braille in order to
check the work of a Braille based student. The Versabraille was the first such portable Braille computer. One of the most interesting areas is that of portable computing. Hawkridge, Vincent and Hales noted that, "Technology - its promise (for integration) will be fully realised only when personal and portable systems, one for each student, become available." (Hawkridge, et al., 1985, p.192). Within five years or less of the publication of this statement such systems certainly were available and in use. Mainstream products can be easily adapted for visually impaired users by adding a speech package on an internal card or by using enlarging software. Such equipment can aid integration in a number of ways.

Notetaking in class is the obvious starting point. Beyond this there are advantages in being able to continue working on an assignment outside the direct lecture time. In connection with this Todd has noted, "It is generally accepted that it can take a visually impaired student longer to complete tasks. The availability of portables means that work can be carried on more easily in study periods and outside college hours". (Todd, 1992b, p.74). French, who is visually impaired herself, has commented in a similar way about the need for more time to complete work. "There is a pervasive and damaging belief that 'support' and 'equipment' can solve all the problems. ... We do most tasks just as effectively as sighted people but ... it takes us considerably longer." (French, 1992, p.97). Apart from the facility to continue and complete work outside the class there is another factor which makes the use of laptop computers valuable. Todd notes, "The improved presentation of work produced on computers is another bonus". (Todd, 1992b, p.74). Dayan has commented in a much the same way that for disabled students IT equipment, "must be fast and the resulting presentation must be good". (Dayan, 1989, p.13).
Reading machines such as the Kurzweil and the Optacon enable a blind student to read print independently; the latter can also be used as a computer screen reader for a wide range of non-standard computer screens. This feature has led Todd and Frith to describe the Optacon as a, "valuable accessing tool well into the 1990s". (Todd and Frith, 1989, p.118). A recent development in reading machines for visually impaired people has been the wider use of OCR scanners to scan documents and put them onto a computer screen which can then be read by a standard screen reader. This system has the advantage of a much lower price than the Kurzweil which uses similar technology. The use of hand scanners offers the prospect of a cheaper way still to get speech output from the printed form. Campbell and Vallender have commented about this technology that, "In terms of cost, the advantages are great. ... The future for blind people in the professions and for students in further and higher education is brightened markedly with the availability of these new developments." (Campbell and Vallender, 1992, p.7).

CD ROM and on-line telecommunication technology offers interesting opportunities for visually impaired people. This mainstream equipment adapted by the addition of voice synthesis or enlarged screen output provides access to a wide range of information services. This has always been a problem for visually impaired people as text based information is a difficult and slow way to obtain data. With the availability of portable CD ROM drives and laptop computers with built in Modems fast and efficient information services are now feasible. The data, once read, can be stored on disc for later use. At the other end of the technology spectrum, mention should also be made of variable speed tape recorders which can run much faster than standard machines without loss of comprehension. They also
have a much higher storage capacity. The American APH tape player is probably the best known.

Surveys indicating the range of equipment in use in colleges show a wide range of products. Butler writes of, "tape recorders, closed circuit televisions, portable electronic aids, and adapted computer terminals". (Butler, 1986). Referring to grants for obtaining specialised equipment for students, Butler notes a clear move towards the micro-technology area. "Earlier ... RNIB grants were used mainly for the purchase of such items as Braille writers, typewriters and ordinary tape recorders, but now an increasing number of students seek assistance towards the cost of more sophisticated equipment such as Optacons, Versabrailles, closed circuit televisions and computer based aids". (ibid., p.8). Stowell's survey revealed a similar picture. It reported that, "A variety of technical aids are now available to assist a visually impaired person in his or her study. Among the most common are low-vision aids, including closed circuit television; Microwriter and other microelectronic equipment, frequently used for its wordprocessing capacity; clear display and talking calculators; and Optacon". (Stowell, 1987, p.53). Patten's survey of further education colleges showed that the distribution of specialised equipment for visually impaired students was patchy. This may simply have reflected that some colleges had few or no students with visual impairments, or that they had their own specialised equipment, as much as disparities in budgetary priorities. Patten noted that 64 of the 286 responding colleges, "provided no equipment at all". (Patten, 1988). Of those that did provide some the most common special resource was "adaptation of computers". (ibid.). Patten also referred to the equipment loan service operated by the RNIB for students to borrow special items for the period of their studies. He, like Butler, commented on the changing nature of the
items in question, noting that the service was, "gradually expanded in budgetary terms to allow the purchase of sophisticated items such as Optacons and Versabrainles". (ibid., p.2).

The Fish Report argued that additional expenditure should be directed towards this area. "Where a commitment has been made to support students with disabilities", colleges should, "channel resources this way". (ILEA, 1985). Butler notes, however, that some colleges are concerned that if they budget for expensive equipment for a particular student it might be unused for some considerable time after that student completed his/her course. He states, "Colleges and departments tend to ask whether there is the likelihood of further students to make use of any special equipment or facilities." (Butler, 1986, p.9). He goes on to argue, though, that there are indications that the, "concentration of resources and development of expertise is likely to encourage prospective students to apply to particular establishments". (Loc. cit.) This clustering effect referred to by Butler ties in with what Low described as "some institutions going beyond the basic level of provision in catering for those with a certain handicap where this seemed particularly sensible". (Low, 1984, p.13).

16.3 Continuity of Access to Technology.

One problem with technology for visually impaired individuals is what could be described as the continuity of access. In some circumstances students will have access to college supplied equipment, if available, while at college but find this will cease when they finish their course and seek employment. Hutchinson has drawn attention to this. He states, "When a student leaves a college, these services must follow on into employment, and the facility provided by
the Employment Service Agency in supplying aids to individual people and to employers needs to be more widely publicised and expanded". (Hutchinson, 1982, p.72). Similar problems can occur with students who are training for employment and who could clearly benefit from using specific items but who do not have access to them. The NFB have referred to this situation in terms of, "A particular anomaly which needs to be dealt with is that aids and equipment which is supplied to disabled employees by the Manpower Services Commission are not available to disabled students training for such employment". (NFB, 1987). Hutchinson has written about the number of different agencies that might be involved in allocating the appropriate technology to a visually impaired person. These include the Local Education Authority, the Social Services Department, the Health Authority, and the Department of Employment. Hutchinson notes that this, "can result in aids not being provided because a particular agency is not satisfied that a need really exists within their terms of reference". (Hutchinson, 1982, p.72). Dayan has reached very similar conclusions. She argues that, "People with disabilities should not be left without the equipment that they need. Transitions should be planned well in advance. Pupils, trainees and students should not have to surrender their IT equipment until it is made available again at the next stage. (Dayan, 1989, p.13).

The problem is not one of technology. To a very large extent the technical problems involved in producing access equipment for visually impaired individuals have been solved. The problem is one of ensuring that the use of the existing technology is maximised by making it more widely available. Discussion of the 'high tech' area is of interest and can offer individuals real advantages in terms of increased access to education, training and employment. It can, however, distract attention from less 'glamorous'
fields which may be of equal or greater importance. For example, the increased access provided by new equipment is only relevant if the individual can physically get to the classroom where the new technology is located. This aspect of the question is looked at next.
17. The Physical Environment.

17.1 Transport.

Actually getting to the college campus can pose some problems for individuals with special needs. In 1980 Hegarty, referring to the integration of pupils with special educational needs, commented that transport could present significant difficulties for some. He states, "Our experience suggests that transport is a major problem. ... you may have to consider what practical pressure you can bring to bear." (Hegarty, 1980, p.10). In a similar reflection, Low argued that for effective integration, "transport services would need to be considerably geared up to meet the needs of visually handicapped children attending ordinary schools". (Booth and Potts, 1983, p.34). The Fish Report considered the situation of colleges in London. It, too, expressed concern on this issue. The report stated that, "Support systems within colleges can only operate when students can reach buildings and get into them!" It went on to note that, "Lack of suitable transport prevents many individuals from making use of educational opportunities within the ILEA". (ILEA, 1985, p.111). It is interesting to note that the situation described here is in London which has a reasonably developed system of public transport. It seems likely that in places less well served in this way the situation could be worse. Of course the question is not just one of the availability of public transport but also of access to that public transport which can present difficulties for some. For example, for individuals with physical impairments the question of wheelchair access to public transport is a major area of concern.

For such individuals there is some evidence of a greater recognition of the need for college support services to
encompass transport facilities. The NBHS survey noted that for students with physical handicaps, "A substantial number of colleges provided support in the form of transport". (Stowell, 1987, p.58). It may be the case that other individuals with special needs, such as those with visual impairments, this need is less well recognised. Patten's survey of visually impaired students in mainstream colleges indicated that, "inadequate or inappropriately timetabled public transport can be a major problem". (Patten, 1988, p.24).

17.2 Mobility.

Mobility to and around a college campus can present difficulties for some individuals with special needs. These difficulties are usually associated with individuals with physical impairments and those with visual impairments. Clearly both these descriptive terms cover a very wide span and it will be the case that some will require little or no assistance in this area while others may need considerable help. The NBHS survey found that 27% of responding colleges provided ancillary staff to assist students with physical impairments. (Stowell, 1987). Patten's study indicated that 23% of responding colleges provided ancillary support for individuals with visual impairments. The ancillaries were employed principally to, "help students move around the college". (Patten, 1988). It seems reasonable to state that at the time of this survey the majority of colleges did not directly assist students who may have had difficulties in this area.

The following comments relate to the field of visual impairment but there may be common ground with more generalised themes in the area of special needs. The difficulties of mobility apply whether or not the student is
following a course at a local college or attending a college away from home. In the latter case there are likely to be the additional problems of becoming familiar with a new locality and finding appropriate accommodation. In practice accommodation does not appear to present many problems. Stowell notes that, "Most blind and partially sighted students require no specially adapted accommodation, but some colleges have ensured that a small number of study bedrooms are particularly suitable, including plenty of power points, storage space, and soundproofing". (Stowell, 1987, p.53). Butler has referred to the question of guide dogs but found there is little to concern the dog owner. He states, "There have seldom been major problems, even where a college has no residential accommodation or there are special needs such as accommodating a guide dog. The crucial factor has been in identifying the accommodation needs and possibilities well before the start of the course". (Butler, 1986, p.10). For individuals with visual impairment mobility training can do a great deal to ease some of the problems of transport and access. Basic mobility training may have been provided during the student's earlier education or by the local social services. Many students find it valuable for this basic training to be augmented by on-site route finding with qualified mobility officers. Butler noted that, "Increasing numbers of students with little or no sight have found it useful to make contact with the local social services department to see if they have a mobility officer, who may be able to produce maps or go over routes". (Loc. cit.). Patten's survey revealed that this help did not appear to be available for some students. He stated that of the responding colleges, "almost half reported that there had been problems with students' mobility". (Patten, 1988, p.23). Butler noted that some institutions were attempting to tackle this difficulty by, "beginning to produce prospectuses on cassette tape, together with tactile maps of
sites and buildings". (Butler, 1986, p.9). Patten reported, as noted above, that some colleges were employing ancillaries to help visually impaired students around. While this might be a short term solution it certainly does not replace the training by a qualified mobility officer. Patten cautioned that, "while such assistance is certainly practical, it cannot be said to develop independence". (Patten, 1988, p.23).

It seems clear that the majority of mainstream staff lack the training or experience to deal effectively with this area. Patten comments that, "There are clearly a large number of cases where further education students, and thus the college staff, do have a problem with mobility". (Loc. cit.). Butler has reached a similar conclusion. He states, "Many members of staff will not have had any direct experience of contact with blind or partially sighted people and felt that their college site or building will pose impossible problems". (Butler, 1986, p.10). It is often the case that many of these "impossible problems" can be resolved when direct experience with students with visual impairment is developed. This ties in with the research that indicated that mainstream teachers' attitudes became more positive when actual experience with individuals with special needs is obtained. Stowell has noted that, "Most older college buildings and many newer buildings can present problems for students with mobility problems ... Often, however, barriers may be partially attitudinal". (Stowell, 1987, p.71).

This is not to say that some of the fears of mainstream staff are not well founded. Cooper has commented that, "For all students with physical, sensory handicaps or medical conditions, physical access is a major issue". (Cooper, 1986, p.37). Legislation in this general area was passed in 1970. The Chronically Sick and Disabled Persons Act (1970)
referred to access to public buildings such as schools and colleges. In Section 8.1. it states, "In the means of access both to and within the building, and in the parking facilities and sanitary conveniences to be available (if any), they make provision, in so far as it is in the circumstances both practicable and reasonable, for the needs of persons using the building who are disabled". (The Chronically Sick and Disabled Persons Act, 1970). Clearly, what is "practicable and reasonable" will be interpreted differently by different people. Hegarty notes that, "There are of course exceedingly many circumstances where it has not been judged practicable and reasonable to make the requisite provisions". (Hegarty et al., 1981, p.245).

Although older buildings may present more difficulties than in this regard, and are therefore more likely to fall outside the "practicable and reasonable" definition, a clear lead has been provided for new buildings by this legislation.

The Fish Report used the expression, "barrier free environment" to describe its commitment to integrated education services. It stated, "Any long-term policy geared towards providing equal opportunities for all, must include a commitment to the provision of a 'barrier free environment' in order that people with physical and sensory impairments can participate in the same activities as everyone else". (ILEA, 1985, p.239). The report defined this environment in very wide terms, but included among them open access to all educational facilities. The report went on to acknowledge that such open access did not exist in practice. It stated that, "the majority of ILEA colleges, whether purpose built or otherwise, are not accessible to more severely disabled students". (Loc. cit.).

It went on to state, however, that fairly small scale changes could do much to remedy this situation. It noted,
"Many minor adaptations can be made to increase access and ease of use; for example the provision of ramps and handrails; the texturing of top and bottom steps and brailled room signs". (Loc. cit.). Stowell, too, noted that similar, straightforward adaptations could prove beneficial. The NBHS survey showed that 78% of adaptations or special design of buildings were concerned with improving general access, defined as, "Entry and egress from a building". Changes designed to assist visually impaired students included, "Good visibility lines added to stairs", and "braille markings" on lifts and doors. (Stowell, 1987, p.53). Cooper has also noted that the, "quality of lighting is important as well as clues about the lay-out of buildings". (Cooper, 1986, p.16). It seems clear that useful adaptations to buildings need not necessarily be very expensive and, in terms of instantly increasing access to the environment, may be attractively cost-effective.

17.3 Safety considerations.

A factor which may exert considerable influence on mainstream staffs, and administrators in particular, is that of safety. Safety regulations on, for example, the efficient evacuation of buildings can be a barrier to the increased integration of students with special needs. Cooper has noted this. She states that, "Many college administrators are concerned about correct emergency procedures for students with disabilities". (ibid., p.27). The fire service provides consultative services to advise on best practice. It may be, however, that the emergency services are in a similar position to that of some college staff in that they have little direct experience of dealing with individuals with impairments in this situation. It may well be that research findings on attitudes towards individuals with special needs relating to general college
staff apply to them, too. This may indicate that working out emergency procedures in situations that include students with impairments might well be valuable. Cooper notes that, "So long as emergency practices are held, ... problems can be ironed out. so that the danger in a real emergency is minimised". (Loc. cit.). Barnes has taken a stronger line on the use of safety regulations as a barrier to access to schools. He argues that, "Health and safety regulations are often presented as a reason for not admitting disabled pupils to mainstream schools. The most commonly voiced concerns are about the means of escape in the case of fire. This is both discriminatory and unnecessary." (Barnes, 1991, p.47). Barnes then goes on to discuss the British Standards Institute (BSI) guidelines (BSI, 1988, part 8) which cover this very point satisfactorily. However he notes that, "unfortunately these guidelines are not mandatory". (ibid, p.48). His comments apply equally to the situation of further education.

One point that is made on the question of adaptations to buildings is that it can create an artificial environment and that students may then find it difficult to adapt when they complete their courses and move on to a new environment. Hegarty has written that, "Too much adaptation removes the opportunity ... to make out in a 'normal' environment". (Hegarty et al., 1981, p.246). There is a question of balance here. The point seems to relate to the dangers that Patten mentioned of "practical assistance" which "cannot be said to develop independence". (Patten, 1988, p.23). Clearly there are dangers in providing an overly protective environment as well as one where access is effectively denied to the student with special needs. Careful thought and consultation with the students involved should help ensure the right balance.
Another danger exists when focus is placed on the subject of buildings. This is that the idea of open access is reduced to one of easily manageable proportions by thinking largely in terms of "bricks and mortar". In some ways this can be measured, budgeted for, and implemented in a straightforward administrative manner, but one which narrows the discussion. Hegarty commented that, "Considerations of the physical environment tend to focus rather narrowly on the fabric of the building. ... This is only part of the problem, however, and perhaps the easy part". (Hegarty et al., 1981, p.242). The Fish Report noted that, "the concept of a 'barrier free environment' means more than just ramps, lifts and wide doors". (ILEA, 1985, p.239). It is clearly important to maintain a full perspective of the concept of open access for students with impairments. The physical environment is one aspect of this, and an important one, but this should not marginalise what Hegarty has called, "the human contribution". (Hegarty et al., 1981, p.242).

Funding for students with special needs can be another area that is marginalised in the sense that it may not receive the attention it requires. Clearly, in the same way that it is necessary for the student to be able physically to get to the college campus to take advantage of integrated provision, it is also necessary for the student to obtain funding to follow the course.

Adams, writing on behalf of the Society of Chief Education Officers has drawn attention to some of the difficulties in this area. He states, "The needs of the ... post-16s will require major increases in expenditure. ... the deficiencies and under-funding are glaring." (Adams, 1986, p.192). He goes on to enlarge on these points and in particular, "the absence of a coordinated national plan", and, "the near-total dependence on extra resources provided outside the educational service." (Loc. cit.) Holmes and Aprahamian have made similar observations and written that, "the situation is too piecemeal." (Holmes and Aprahamian, 1981). Hutchinson has also criticised this aspect of further education. He states that, "The area of financial support for young handicapped people undertaking work preparation is both disparate and confused." (Hutchinson, 1982, p.72). Hutchinson also commented on the lack of funds for student support. He pointed out that the Warnock Report had recommended that local education authorities should help students with special needs by making full use of their discretionary powers to award grants. However, he notes that, "there has been little evidence of this taking place." (Loc. cit.). The Warnock Report's comments on this point could not have been clearer. It stated, "our recommendations for increased opportunities for young people with special needs to continue their education will be to

Cooper has attempted to clarify this system of student finance that Adams has described as, "chaotic diversity". (Adams, 1986, p.192). Cooper states, "People on MSC course (now known as ET) receive a training allowance while on those courses. Students on other non-advanced courses may receive a discretionary local grant. Disabled students may also claim a special allowance from the local authority. ... Students with disabilities not receiving local authority grants may be able to qualify for a DHSS Disablement Allowance. ... Students may also be eligible for Supplementary Benefit from the DHSS. ... People receiving Supplementary Benefit may also receive regular extra allowances for additional requirements occasioned by a handicap. They may also receive single payments for various needs including education or training. For people who cannot walk or who have considerable difficulty in walking there is a Mobility Allowance, also from the DHSS." (Cooper, 1986, p.25). In the light of such complexity of regulations, Adams has pleaded for the replacement of this "diversity" by a, "rational and fair system of financial support." (Adams, 1986, p.192).

It is clear that the system of financial support for students with special needs is a very complicated one. The fact that the arrangements can be changed by the various bodies concerned make it more so. Cooper notes this point. She concludes, "These rules are complex and change from time to time. The result of this is likely to be that students may find it difficult to obtain funding initially, and that if they do succeed they may fail to secure their full entitlement to grants." (Cooper, 1986, p.25). Holmes and Aprahamian have provided a telling description of this situation. They write, "Desperate efforts are made to
extract benefit from schemes. ... We have arguments about whether the course is chiefly a training course - in which case the MSC must pay, or whether a course is largely educational - in which case the education authority must assume responsibility. There are arguments too about whether the handicapped person is there for educational reasons - receiving an educational grant - or chiefly for social reasons - in which case the social services must pick up the bill. All time consuming, costly, and dispiriting arguments, which serve only to reduce further the opportunities available to the handicapped school leaver." (Holmes and Aprahamian, 1981, p.34).

Given the nature of this financial support system it seems clear that help and guidance through its complexities is an important part of overall support services. Cooper argues that, "Because these allowances are so complex and many students arriving at college will be applying for financial help for the first time, it is helpful to have a member of the college staff who can offer advice." (Cooper; 1986, p.26). Holmes and Aprahamian would argue that this assistance needs to be provided before the student arrives at college. Indeed, he/she might never get that far without some guidance on funding. They compare the financial, "rough seas of further education" with the, "relatively safe haven of higher education" with its mandatory awards. (Holmes and Aprahamian, 1981). This distinction has been even more clear since the introduction of the Disabled Student Allowance (DSA) principally for the Higher Education sector. It seems that guidance on funding is an important aspect of general support services that needs to be brought into play at a preliminary stage.

19.1 The Relative Value of Different Factors.

Given the wide range of support services and the resource implications of implementing them effectively, there seems a need to establish some idea of the relative importance of the differing components. This would assist in the planning, resourcing and administration of integration services. Bishop has argued that, "If decision makers can be made aware of what variables to examine ... the anticipation of success could be greater". (Bishop, 1985, p.946). Erwin has identified the investigation of factors needed for successful integration as the, "necessary first steps to ponder". (Erwin, 1991, p.254). Some writers in the field of the education of individuals with visual impairments have attempted to do this.

In 1977 in America Keilbaugh published a small survey of 33 mainstream teachers who taught children with visual impairments in their classrooms. The survey identified three key areas. It states, "It was established that supportive services ... should be concerned with services in three specific areas: 1. Educating the regular classroom teacher about the particular handicapping condition of the exceptional child. 2. Providing and demonstrating the special materials designed to meet the needs of the exceptional children. 3. Assisting in planning an individual program for the visually impaired child in the regular classroom". (Keilbaugh, 1977, p.434).

In 1986 in America, Bishop's survey entitled, "Identifying the components of success in mainstreaming", attempted to identify the key factors for effectively integrating visually impaired children in regular classes. The survey
had a 30% response rate which represented the views of over 300 individuals, including parents, mainstream teachers with visually impaired children in their classes, specialist teachers of the visually impaired, education administrators and some students. The first major conclusion of the survey was that the cumulative effect of many factors should be recognised. As mentioned earlier in this paper, it stated that, "success in mainstreaming for visually handicapped students is a collaborative process". (Bishop, 1985, p.945). It went on to state that, "The second broad conclusion based on the results of the study is the critical role of attitudes in successfully mainstreaming of visually handicapped students". (Loc. cit.). The third conclusion was that, "social interaction" played an important role. Fourthly, the survey concluded that, "academic achievement" was "rated highly as an indicator of success in mainstreaming". (Loc. cit.). Fifthly, "realisation of potential" was, "valued by all population sub-groups". (Loc. cit.). The last major conclusion of the study was concerned with the, "high value placed on the available support personnel". (Loc. cit.).

In 1986 in this country a survey of over 800 parents or guardians of visually impaired children by Buultjens indicated the factors that they regarded as important. The survey covered both special schools and integrated mainstream provision. Both sets of responses indicated the same factors for successful educational outcomes. It would seem from this that the positive discrimination that support services represent is similar in profile in both the special and mainstream settings. The survey identifies seven factors, "concerning teaching methods, provision of resources and successful integration into society". (Buultjens, 1986, p.66). It continues, "The seven items are -
1. Classwork suited to their own rate of working
2. Braille, books with large print or aids to low vision
3. A chance to grow up with friends in the local community
4. Better opportunities to integrate into community on leaving school
5. Better employment prospects
6. Teachers with understanding of visual impairment
7. Specialised help from physiotherapists, speech therapists, etc.." (Loc. cit.).

Some of these factors fall outside what would be regarded as educational support services. However, items 1, 2, and 6 are clearly central to a support structure.

In the field of further education there has been relatively little direct research in the area of the support needs of further education students. In 1981 Bradley and Hegarty commented that, "Research on the availability and efficacy of support services has tended to neglect the special requirements of school leavers and students attending colleges of further education". (Bradley and Hegarty, 1981, p.29). To some extent the situation has improved since then. There have been a number of FEU reports (1986, 1987a, 1987b, 1988) in the general field of special needs in further education. The NBHS survey of 1987 provided a much needed overview. The specific field of visually impaired students was included as a small part of this overview.

An in-depth survey of this specific field was carried out by Patten in 1988. He was principally concerned to examine the implications of his findings on the support needs, as determined by further education colleges, for the RNIB Student Advisory Service which he managed. There had been some recognition of the changes taking place in the post 16 year old age group and the greater demands these changes were placing on the service. There was also a recognition
that the service had traditionally been weighted towards higher education and assisting students from the specialist colleges. The trends towards greater numbers of students with visual impairments in the further education field and for increased numbers in integrated secondary education, suggested that traditional approaches would need to be revised. Patten contacted all the further education colleges in this country in an attempt to assess current levels of support and determine the areas where resources might be best concentrated. The survey had a 74% response rate which represented the views of 286 colleges.

The survey provided confirmatory evidence for many of the trends outlined in this paper. Increases in student numbers were clear. The levels of existing support were catalogued. The main conclusion of the survey in the area of support services was as follows. "It is clear ... that the main areas in which colleges would like to have assistance are staff training and development and information about the special study equipment possibly including the chance to try out the latter". (Patten, 1988, p.31). The survey goes on to list the colleges' preferences for support services in rank order.

"1. staff training;
2. equipment;
3. finance planning;
4. planning courses;
5. examination arrangements;
6. counselling;
7. mobility". (Loc. cit.).

The most recent survey in this general area of post secondary education and training for individuals with visual impairments was a collaborative project organised by NIACE, RNIB and SKILL. The survey covered colleges of further
education, colleges of higher education and Local Education Authorities. The questionnaire design did not seek to discover the views of the students in these institutions. 162 colleges of further education responded (about 41%). The survey listed the support service that were mentioned by the colleges in their returns. These give further confirmation of the areas identified as important in terms of support. The services were not evaluated and ranked in any priority order. They were, "1. not specified/as required 2. oversight of special needs coordinator 3. tutorial support 4. non-teacher practical support 5. specialist support 6. adaptation of materials 7. special equipment 8. physical access issues 9. staff development 10. exams 11. links with visual impairment specialists 12. assistance with obtaining help from other bodies (funding)". (RNIB, 1992, p.9).

19.2 The Value of Student Opinion.

The surveys described above tend to look at the provision of support services from the perspective of the teacher, parent, and administrator. Rarely is the voice of the consumer, the person with a visual impairment, heard. This may be due to the fact that much of the research has been concerned more with the pre-16 year old age group rather than the post-16 year old one. It may be the case that the views of the younger age group are not felt to be sufficiently valuable by researchers. It seems that this line of argument is far less tenable in respect of the second group. Bishop's survey did include the views of some students who had been involved in integration schemes. These students were defined as, "visually handicapped students or graduates at least sixteen years of age or older" (Bishop, 1986), but these comprised just over 15% of the total population of the survey. Bishop was attempting
to present the, "collective judgments of relevant individuals" (Loc. cit.) and so sought to include the students' view, at least to some extent. Patten's study of visually impaired students did include a section where the views of some students were included. However, these views were not standardised and did not form part of the main body of the survey. Generally, however, as Gillespie and Turnbull noted, "Few studies have included the opinions of handicapped students themselves about mainstreaming, and this population is in a unique position to contribute information about succeeding in a regular classroom". (Gillespie and Turnbull, 1983, p.27). This still seems to be the case. It is the intention of the third part of this thesis to attempt to redress this imbalance, at least in so far as the field of students with visual impairments in further education is concerned.
Part Two of this thesis began by addressing the concerns of those who see integrated special needs provision in the mainstream as unlikely to provide the full support services that have traditionally existed, or have been claimed to have existed, in the segregated special education sector. To the extent that support services for individuals with impairments in mainstream provision are regarded as fundamentally important to the success of such provision, these concerns focus attention clearly on this area. Low has discussed this point. He states, "The opponents of integration are ... able to argue that integration is incompatible with providing the kind of special help that handicapped children clearly need. But such an antithesis is wholly false". (Booth and Potts, 1983, p.40). Low goes on to say that properly supported integration schemes can provide this "special help". This focus on proper support is all the more important as the numbers of students with special needs has been shown to be expanding, generally, and expanding quite rapidly in further education. The thesis then looked at the principle areas of concern to assess the extent of need and to get an indication of the current level of service provision. It seems clear that in a number of these areas there is considerable room for expanding such provision.

The role of specialist advisory teachers was examined and found to be regarded as a significant factor in the success of any support structure. It seems clear that, particularly in a specialist area such as sensory impairment where the incidence of impairment is relatively low, it is unreasonable to expect mainstream teachers to have the requisite knowledge and expertise to maximise an individual's learning potential. Teacher education and
training can help overcome some of the difficulties in this area but direct access to trained professional advice is clearly also necessary. Examination of the in-service education and training needs of mainstream staffs indicated that this was felt by the staffs, themselves, to be an important factor for ensuring effective integrated provision for individuals with special needs. There was also evidence that this provision was less widely available than the demand for it would require. There was recognition, too, that an expansion in this provision could do much to lessen negative attitudes, which were felt by many writers to be a significant factor in the effectiveness of integration schemes. This approach was felt to be particularly effective if the training involved contact with individuals with impairments.

The preparation of work materials in specialised media has been another area where concerns have been expressed that the mainstream cannot match the expertise of the special sector. Examination of this area indicated that this, in fact, was a difficulty that could be dealt with relatively effectively, provided the necessary planning and time were given to it. Many mainstream teachers did express concern at increased workloads that this might entail but, paradoxically, it has been shown that the planning and organisation of work for specialised media can have an overall beneficial effect on the whole range of a teacher's preparation work. The thesis then looked at developments in the field of micro-technology that have had a considerable effect in this area and make it much easier for an individual using a specialised medium to communicate, make notes, write assignments and take examinations with a minimum of difficulty. This, however, assumes that the individual can obtain such equipment.
The thesis then considered what some have regarded as one of the most basic concerns in this area of integrated provision. This is the question of physical access to the mainstream institution. Several writers have observed that if an individual cannot actually get to the mainstream site, or once there, not get around the site satisfactorily, there is little point in establishing a support structure for that individual in terms of teaching materials, strategies, equipment, and so on. To some extent this is an area that has not received as much attention as some others, despite its basic importance. In a similar way the importance of funding for students with special needs has, perhaps, been underestimated. In a sense this can be seen to be the 'bottom line' in that without funding the student will never be able to take advantage of the opportunities that exist. The thesis considered both these areas and it seems clear that any support structures that are established should take these important areas into consideration.

The last section of Part Two looked at a number of surveys that have analysed mainstream support structures and attempted to place the different variables in some form of rank order. This could be a useful guide for those planning and managing such support structures and helpful for the allocation of resources within them. Some surveys have been of a generalised nature looking at special needs support provision in the pre-16 year old age group. Some have specialised in the specific field of visual impairment for this age group. Some have looked specifically at the post 16-year old group and some at the specific field of visual impairment in this age group. What emerges is a general picture where staff training needs seem to be regarded as probably the most pressing. Preparing specialised materials, sometimes linked to specialised equipment, is also ranked highly. Special advisory services come out high in the order. It is interesting that the question of
mobility and access to buildings does not feature highly in most studies and appears bottom of Patten's list (1988), although it is quite prominently featured in the Stowell study (1987).

The thesis noted that these surveys tended to demonstrate the viewpoint of the provider rather than the consumer of these support services. It may be the case that a survey of the views of visually impaired individuals in further education would reveal a similar picture. Alternatively, it may reveal significant differences. In any event such a survey would be of interest to those planning or administering support structures. It is the intention of Part Three of this thesis to investigate this question.
Part Three.

The Report of the Survey of Mainstream Visually Impaired Students in Midlands Colleges of Further Education.


21.1 Purpose.

This research study was designed to identify and examine the support services that relate to the successful integration of visually impaired students in mainstream further education. It was also the intention of the study to evaluate these services to establish their relative value in this mainstreaming process. The evaluation was to be carried out from the perspective of visually impaired students in further education rather than that of the professionals in the visually impaired field. It was felt that this perspective was clearly important and had not been given due weight in the research to-date.

A questionnaire was designed in order to ascertain a collective view of visually impaired students in mainstream further education on this matter. It was constructed to obtain the opinions of these individuals on:

1. the extent to which their own experience of support provision demonstrated the level of provision and their degree of satisfaction with the provision;

2. the range of services that have been commonly identified in the effective integration of visually impaired students in mainstream further education; and to identify other
potentially important services that may have been previously overlooked; and

3. to gauge their views on the value of mainstream provision for visually impaired students.

It was felt necessary to restrict the survey population to all the visually impaired students in mainstream further education in the Midlands area. Obtaining responses from this population was regarded as a reasonable objective. Although it would clearly be better to get returns from the whole of the country, this was felt to be unrealistic for the resources of this particular study.

It was the intention to use this data, based on the views of students, to add to the findings of other surveys which have generally used the perspective of other subject groups. This exercise will demonstrate to what extent the perspectives of different groups coincide or differ on the question of effective factors for the integration of visually impaired individuals in mainstream further education. It is intended in this way to improve and extend the data in this area.

21.2 Questionnaire design.

The instrument evolved over a six month period of testing and refining. This process was carried out with the help of visually impaired mainstream students at Loughborough College of Further Education. The range of the instrument and the effectiveness of the items was substantially improved in this way. It was then further refined by examining the responses to the pilot study.
The statement of purpose of the questionnaire was -

Do mainstream visually impaired further education students agree/disagree with the evaluation of support needs indicated by surveys to-date (which have generally taken little note of their perspective).

The original areas addressed by the instrument were -

A. The general integration theme;
B. Advantages/disadvantages of integration;
C. The range of support services for visually impaired students;
D. Biographical background data of respondents.

These four areas became the four sections of the first version of the questionnaire. Sections A, B and C reflected the content and order of the first two parts of the dissertation and to this extent seemed a logical way to structure the questionnaire. After testing, however, this order was changed. On reflection, it became clear that the requirements of good questionnaire design were much more important than mirroring the dissertation structure.

The biographical section was much better placed at the beginning of the instrument where there was a need for straightforward, closed questions which would enable students to progress quickly through to the next part. By placing this section at the start it also meant that the important part on evaluating support services came at the end of the instrument. This was an improved design in that the rest of the questionnaire led into this and better prepared the student for it. It was this second version that was used in the in-house test with Loughborough College students.
It was the original intention to use a range of question types. These were Likert type scale questions, rank order items and biographical data questions. After testing, this range of questions was limited by omitting rank order items after the in-house testing. The wording of the items was checked closely with visually impaired students to work towards simplicity and clarity.

21.3 Layout considerations for visually impaired users.

The first version of the questionnaire used in the Loughborough College test was in four sections and was five pages long. The pilot version was improved and reduced to four pages. This length was retained for the survey proper. The design brief included the production of the instrument in an eighteen point Large Print font with appropriate Bold printing to ease readability. It was important that the questionnaire was clear and well laid out in a manner that was accessible for the largest numbers of visually impaired respondents. It was the intention that the questionnaire should look like a quality document and be attractive and interesting to respondents. This requirement for Large Print layout obviously made the questionnaire a longer document than it would have been in standard print size. At the same time I was conscious that too many pages would act as a disincentive to respondents. Reducing the length, without losing necessary data, was a prime consideration during the evaluation process.

The design brief also covered the production of a Braille copy. This ran to five pages. There was less emphasis on layout with this form of the instrument because the rules of Braille production point to the most effective use of space on the Braille page in order to lessen the number of pages required in what is a bulkier medium than print. Recording
responses for a Braille questionnaire poses some problems that are not encountered in a print form. The Braille version had three different ways in which it could be completed independently by the student. Responses could be made on to cassette tape; they could be recorded separately on an extra sheet of Braille paper; or the answers could be marked onto the Braille questionnaire by indenting the paper to indicate which option had been selected or alternatively by marking with a pen. The student could also complete the questionnaire by using an amanuensis to record the responses on a print version.

The questionnaire was prepared on a Dell 386 computer using Wordstar 5 with Helvetica 18 font selection. The Braillemaker Professional transcription package was used for transcribing to Braille. An Hewlett Packard Laserjet was used for print production and an Index embosser for Braille.

21.4 The In-house Test and Redrawn Items.

Prior to the pilot study a preliminary test of the questionnaire was carried out at Loughborough College. This involved seven visually impaired students who were following full time mainstream courses. The intention was refine the survey instrument before the pilot stage and to evaluate the structure for analysing data. It also provided an opportunity to try out the computer software which was to be used for the preparation and presentation of results. The in-house test questionnaire returns demonstrated a number of weaknesses which were dealt with before the pilot study was undertaken. Several of the items needed redrawing and one section required more drastic action.

In Section A it was necessary to expand the number of questions in order to obtain information on the sex, age and
type of course being followed. This data was needed for analysing the data. The questions were straightforward, closed items and were simply inserted at the beginning of this section for the version used in the pilot study. This had the added advantage of extending the good clear start to the questionnaire.

Question A2 on the in-house test instrument proved to be badly constructed. It produced confusion with respondents and did little to put them at their ease at the beginning of the questionnaire. It had been the intention to make the first section straightforward to help respondents into the questionnaire. This had clearly not happened. The item was concerned with support personnel. The confusion was caused by the wide choice of options. This included the option of "local association". This had been confused with "local authority" and taken the question into the realm of financial and general support rather than the much more specific area of specialist personnel. The item was improved by the removal of the "local association" option.

Section B attempted to determine the attitudes of the respondents towards integrated provision. The five questions in this section make up a Likert type scale in order to gauge this. The five items span the area of integrated provision at both secondary and post-secondary levels. This has proved to be unsound in that attitudes towards integrated provision may vary across these two sectors. Rossi et al. notes the assumption of, "a continuous underlying attitude dimension" (Rossi et al., 1983) is necessary for Likert scales.

Many respondents may well have been in segregated special provision in their secondary schooling and then moved to mainstream post-secondary provision. They may well have positive experiences in both areas which would make the
responses ambiguous if the item remained as it was first written. For these reasons it was felt safer to restrict this section to the post-secondary area. Question B2 referred to "separate special schools" providing the best education for visually impaired people. This was changed to "separate special colleges" to ensure the necessary "continuous underlying dimension".

Section C turned out to be quite a disaster area. In the in-house test nearly half the respondents failed to carry out the instructions as intended. The section was concerned to see what balance of advantages and disadvantages between special and mainstream provision was perceived by the respondents. The idea was that the students should weight factors from 1 to 5 to provide an ordinal scale. To some degree the section overlapped in content with section A and Section B. There was also some indication from the in-house test that the instrument was too long. For these reasons it was decided that the best resolution of these problems was to delete the section. This made the questionnaire both easier to complete and shorter without the loss of important data. This clearly indicated that the original was over-long and over-complicated.

Section D was intended to discover which factors, from the student perspective, were regarded as the most important in ensuring successful integrated provision. The idea was to obtain weighted responses to a range of factors. However, there was a strongly positive response to all the items in this section in the in-house test. These factors can all be seen as intrinsically good things. To this extent there is a danger that ranking the results could be misleading in that positions on a ranked list could be misinterpreted as indicating greater degrees of importance than really exist. I felt that rewording the factors in a more extreme form might produce a wider range of responses. Changing the
wording from "important" to "very important" factors for integration success might produce a clearer picture.

It is interesting to note that this latter form of words was originally intended to be used. It was discarded due to the needs of saving space on the Large Print layout. The extra word went over the line length and required an additional line on many of the questions. This took extra space and made the questionnaire longer than I felt was tenable. It was a case of improved layout design causing a possible deterioration in clarity of responses. At the second attempt it proved possible by reworking the questions to take out superfluous wording and to include the necessary "very" within the line length.

Deleting the third section to clarify and shorten the questionnaire obviously changed its structure. This led to a further reconsideration of the order of the sections. Section A was concerned with biographical details and was intended to be as straightforward as possible to facilitate student responses and ensure maximum returns. This remained the opening part of the instrument. Section B was concerned with the views of respondents about the special/mainstream debate. This more generalised theme seemed to fit better at the end of the questionnaire. A better flow through the instrument was secured by having the section on factors for effective integration follow immediately on from the biographical section. This dovetailed well as the first part included these factors but looked at them from a directly personal perspective. The new structure was shorter, more logical and easier for respondents to complete. The flow of logic was from biographical and direct experience - through to an evaluation of factors for success - through to an assessment of the overall importance of integrated provision.
The main focus of the survey is support services for mainstream visually impaired students in further education and to this extent the subject matter of each of the three section in the instrument is in common. But each section has a different perspective on this area of the investigation. For example, some of the subject matter in the new Section B has been looked at in the first section of the questionnaire. In that biographical section I was concerned to find out about the direct experience of visually impaired students and to gauge the degree to which they were satisfied with the support structures that existed for them. Section B approaches the same subject area from a more theoretical and analytical perspective. It was intended that the biographical questions would lead logically into this area. In the same way Section C also covers the same overall subject area but from a much more generalised attitudinal perspective. Each section is intended to provide data which, while clearly interlinked, attempts to answer different question within the overall theme.

21.5 The Pilot Study and Redrawn Items.

The pilot study returns demonstrated that the process of refining the instrument needed to continue, albeit on a more minor scale. Question A6 needed to be looked at in the light of the responses in the pilot survey. In the Any Other section 33% of the pilot population responded in unison that there was another item of equipment that would assist them on their course. This was the use of Low Vision Aids. This level of reaction seemed a valid reason to add LVAs to the equipment list for this item.

In the same question I also felt that the description "Electronic Brailler" was insufficiently accurate. The
description was meant to include machines such as the Braille n' Speak, Eureka and Jotta. There are machines that could well be described in the general way above which were not intended to be included in this category. For example, the heavier desktop machines such as the Mountbatten Brailler would normally be included in any list of "electronic braillers". It was decided that a more suitable form of wording would be, "Electronic Braille Notetaker". The instrument was changed to this effect.

Section B proved to be in less need of development. The question on preferred media did not include the use of audio tape. This is often used by students with visual difficulties for note taking and access to texts. This area was covered to a limited extent in question A6 which is concerned with the equipment needs of students. It was necessary to insert an item on the use of audio tape in Section B in order to obtain more data on this area. Otherwise this section was left untouched as a result of the pilot survey analysis.

In Section C there was some repositioning of questions that needed to be carried out. There were five items in this Likert type section. Three were positively framed and two negatively. It was felt that it was better to start this last part of the questionnaire with a positive rather than a negative statement. The questions up to this point had been of fact, background or positive in nature. A smoother transition into Section C could be obtained by maintaining a positive approach for the first item. This could easily be done by reversing the position of C1 and C2.

22.1 The population.

As indicated above the survey population was to be the mainstream visually impaired students in further education colleges in the Midlands area. It was the intention to use the views of this group of individuals to be generally representative of the views of visually impaired mainstream F.E. students in the whole of the country. The term, "visually impaired student" is taken to mean one who is registered as partially sighted or blind. The "mainstream" is regarded as the area where courses are followed in full and open participation with the whole range of students. It is not taken to include discrete provision, even where this is offered as part of a further education college's range of courses. "Further education" is a complex sector. A long and full definition of this part of the education and training system is given in the introduction to this paper. Eighty-five colleges were identified in the target area using the "Education Year Book, 1991", (Lyttelton, 1990).

By contacting the special needs coordinators (or equivalent post holders) at these colleges I established that there were visually impaired students attending at 45 of them (53% of the total). Further investigation revealed that there were visually impaired students on mainstream course at 31 of the colleges. This represented 69% of the colleges with visually impaired students and 36% of the total number of further education colleges. These colleges are listed in Appendix 1.

All 31 colleges with visually impaired students on mainstream courses agreed to participate in the research programme. In the event twenty-five of the colleges responded positively by distributing and returning
questionnaires. This represented 81% of the colleges with mainstream visually impaired students. There were 121 students identified in the 31 selected colleges. Completed returns were received from 79 students which represented 65% of the total.

22.2 The Role of the Special Needs Coordinators.

The whole thrust of this work is to obtain the views of the students directly concerned. This group has been under-represented in the research to-date and the intention is to go some way to redress this imbalance. A prime difficulty was likely to be obtaining the responses of these students who are distributed widely in colleges across the target area - the Midlands. Dealing individually with each student would be very difficult. There would be the problem of identifying students in the first place. Then there would be the difficulty of corresponding separately with each one. A way to simplify this situation is to approach these students through an intermediary in each of the colleges who would be willing to administer the questionnaires and return them. The role of special needs coordinator in many further education colleges has expanded in recent years to include an overview of integrated as well as discrete provision. These coordinators are in possibly the best position to know of students on mainstream courses with visual impairments in their colleges. The author notes that the recent collaborative survey by RNIB, NIACE and SKILL stated that the further education colleges in their national study, "had visual impairment in the remit of the Special Needs Coordinator". (RNIB, 1992). Introducing the special needs coordinators (or equivalent post-holders) into the questionnaire distribution system does make it dependent on a third party and to that extent it weakens it. On the other hand, the author has some evidence that for this
survey special needs coordinators may well be willing to go to considerable lengths to secure returns. One wrote stating, "I am sorry that the student to whom I sent your questionnaire has not returned it. ... I'm afraid she is a very determined young woman - I even sent her the stamped addressed envelope to return it in - but she has chosen not to do it". It seems hard to believe that the author could have done more if he had been in direct contact with the student himself. In any case a direct approach to individual students was likely to be too difficult to achieve effectively within the constraints of this study.

22.3 Letters of Inducement.

Many writers (including Ary, 1985, Galfo, 1986) have noted that obtaining letters of inducement can have a positive effect on maximising returns. Given the reliance on a third party (college coordinators) it was felt that it was very important to obtain support from individuals or organisations that would carry weight with the target client group.

It was decided to contact Deborah Cooper, the director of SKILL (the national organisation for students with disabilities). The research area was outlined to her as was the important emphasis on the student perspective. She was asked for a letter of support which could be included with the instrument. A similar approach was made to David Blunkett, M.P. for a Sheffield constituency. He had been a lecturer in further education before he began his political career. The author knew from his published speeches that he was strongly in favour of integrated educational provision. For these reasons he seemed a good choice. Fortunately, both Deborah Cooper and David Blunkett agreed to provide letters supporting the survey. Copies of these letters of
inducement are in Appendix 2. Standard letters were drafted for the special needs coordinators to accompany the questionnaire and the letters of inducement in order to help secure maximum responses.

22.4 Refining the Distribution System.

In order to test the distribution system three Midlands colleges were selected where it was known from previous professional contacts that there were visually impaired students on mainstream courses. Questionnaire packs were sent to the special needs coordinators. The names of the coordinators were not known so the packs were addressed to post-holders. Each pack contained five questionnaires with the letter to the coordinator and the letters of inducement from David Blunkett and Deborah Cooper. The deadline for the return of the questionnaires was the end of November, 1991. This allowed up to four weeks for their completion and return. Prepaid stamped envelopes were included. At the end of November the return rate was 0%. The prepared follow up pack designed to prompt late returns were sent out. These contained a copy of the questionnaire, the letters of inducement and a letter to the coordinator. This last letter had a tear-off slip to return in the event of their being no visually impaired students at the college. Prepaid stamped envelopes were again included. The return rate for this exercise was again 0% by the end of the Autumn term, 1991.

At the start of the Spring term, 1992, the colleges were contacted by phone. In one college the coordinator's post had been vacant due to illness for the whole of the previous term. In the other two colleges there was no sign of the questionnaire packs. It remained a mystery as to what had happened to them. What was clear, though, was that this
distribution system was unlikely to produce a high return rate. Changes would be needed for the pilot study.

To refine the system and ensure a better rate of response for the pilot, it was decided that the questionnaire packs would be addressed to a named person and that the author would need to secure that person's cooperation prior to sending the questionnaires. A database was set up of all the colleges in the Midlands area with details such as address, phone number, contact name, and whether there were visually impaired students. This also enabled a record to be kept of when the questionnaire packs were sent out and when the returns were received on the same database. The new approach was designed to ensure a named person was cooperating with the distribution and return of the questionnaires before they were sent out.

In February, 1992, six colleges were selected. The author phoned the colleges and made contact with the special needs coordinators to establish if there were visually impaired students attending mainstream courses. In four of the six cases there were. Six visually impaired students on mainstream courses were identified. The coordinators concerned were very willing to help in the distribution and return of the questionnaires. Packs were sent out to these colleges. The packs contained an individualised letter to the named coordinator already identified rather than the generalised letter used earlier. They also contained the letters of inducement and, of course, the questionnaires. The deadline was set for the end of the February. The response rate was 100%.

This necessary refinement of the distribution system was the most valuable lesson of the pilot study. The original system, on paper, seemed to be sound and the author was sure that a reasonable return rate would be obtained by using it.
Experience of the pilot survey proved very much the opposite to be the case.

22.5 Distribution Timing

Another important aspect of the distribution of the questionnaires was the question of timing. The author felt that it was at the centre of the approach of the study that the students be asked their views on the reality of mainstream provision as they had experienced it. Many further education courses are one year or less in length. It is also the case that a settling in period is necessary for any support structure to be set up and working effectively. This is likely to take the first term in some cases. It would seem for this reason that the Autumn term would not be a good time to conduct the survey. Even in the second term, many students might still be coming to terms with their environment and fine tuning support systems. It seemed that the best time would be the Summer term even though there were likely to be difficulties caused by the fact that examinations and, often, work experience placements take place in this last term of the academic year. By this time students should have in place as effective support structures as are likely to be set up. They are also more likely to have adjusted to working in a new environment. It seemed the optimum time in the academic year to obtain the best quality data.

An additional consideration in this question of timing was that of the follow up procedure in the event of non-returns. Although the pilot scheme had eventually proved to be 100% successful in terms of obtaining a full set of completed questionnaires, it was unlikely that this would be repeated in the survey proper. This meant that the post deadline procedure was likely to extend beyond the end of the Summer
term. To some extent this would delay the late returns coming in. However, the questionnaires would certainly have been distributed by the college coordinators and it would be a matter of waiting for the students to bring them back into college at the start of the new term.

On balance, it was thought best to go for the option of distribution in the third term rather than earlier in the academic year even though there might be some delay in the late responses procedure. The prospect of better quality data outweighed the problem of an extended post deadline procedure.
23. Data Analysis.

23.1 General Comments.

A range of software has been used for the data analysis. The SuperCalc spreadsheet programme has been used for tabulation of the results and for the graphical representation of findings. The dBase database package has been used for recording data from the questionnaires and for basic analysis and cross-referencing. The Basic programmes for Chi-square test calculations has been used. This programme is one written by Cohen and Holliday (1982).

All the data has been subjected to the much used Chi-square test. Cohen and Holliday describe it as, "probably the most used of all non-parametric tests". (ibid., p. 133). It is used where the, "data are nominal and grouped into categories or boxes". (Loc. cit.). The test looks at the difference between observed and expected frequencies to establish the degree of significance that can be attached to the data. If the data falls into the theoretically expected area its significance is therefore much reduced. For the Chi-square test to be fully relied upon, there should be at least five expected frequencies for any category. All the data in the survey passes this threshold. All but one item in the instrument obtained a significance level above the 1% level. In other words there is less than one chance in a hundred of observing the result through chance alone. The exception was item A3 where there was a very even spread of responses. It seems reasonable to state, then, that the instrument in general returned data of a high level of significance.

The results from Section B are used to establish a rank order list of factors involved in the successful integration
of visually impaired students in mainstream F.E. Each factor is evaluated on a five point scale from strongly positive through to strongly negative. Scoring these results enables production of the ranked list. Section C forms a Likert type scale. Such scales have been described by Ary as, "one of the most widely used and successful techniques to measure attitudes". (Ary, 1985). This section also has a five point scale which attempts to determine the views of respondents towards special further education and mainstream further education. Scores give positions on a segregated/integrated continuum. This section was subject to a sample test/retest procedure to establish the degree of correlation between the two sets of data. This was to ensure that the views held on this area were reasonably consistent over a two month period. Ten of the original respondents were asked to complete this section for the second time at the start of the Autumn term. The comparison of results confirmed that such a consistency did exist.

A note to make at this stage is concerned with the presentation of the results in percentages. These have been rounded to whole numbers in all cases. This may well lead to the percentage totals being slightly over or under 100%.

23.2 Data analysis - Section A Results.

This first section of the questionnaire is sub-titled, "About You". The main aim of this section was to establish the levels of satisfaction felt by students for the support services they were receiving at the time of the survey. This information was central to the questions raised by many as to the effectiveness of support arrangements in mainstream further education for visually impaired students. As Jamieson asked as of mainstream institutions as long ago
as 1977, "Can they marshal enough support, in resources and expertise?" (Jamieson et al., 1977, p.110). This section is an attempt to discover the opinion of visually impaired students on this central point.

It was also designed to ask biographical details which would be quickly answered by respondents and so take them easily into the questionnaire. There was also the intention to obtain biographical information to be used in the analysis of the data by, for example, gender and age.

Question A1 - Do you use - Print, Braille or both?

84% of the subject group in the survey use a suitable Print format for their communications medium. This was no surprise as the majority of visually impaired people have some degree of usable residual vision. It clearly demonstrates that the common reaction to visual impairment and blindness of thinking that there is no sight at all, is a distorted one. The percentage of the respondents who indicated Braille as the medium of choice was 10%. There seemed to be little difference in the results when looked at from a gender perspective. 86% of male students were print users and 81% of the females. Interestingly there was a low 4% response in the joint Braille/Print category. This was a surprise as, in the author's experience, it is not uncommon for some visually impaired students to use both media. The either/or approach may be an over-simplification as some students prefer a combination where different media are best suited to particular uses. An example that comes to mind would be where a student on a business studies course might use Braille for the text based work due to its advantages of speed but Large Print for Finance where the number work was easier to work with in the print form. However, in this survey it proved to be the case that Print/Braille
combinations were not used by many respondents. This may indicate that assessment of student need has not been sufficiently rigorous in this regard. Incidentally, all the respondents who did use Print/Braille combinations were male. By adding this result to the figures for Braille users it appears that the breakdown by gender on preferred medium comes out still more evenly. 14% of male students used Braille or Print/Braille and a similar 14% of female students used Braille.

Question A2 - Are you Male, Female?

72% of the respondents indicated that they were Male. 27% indicated they were Female. It does seem that this large majority of male students in the survey indicates a gender imbalance. A breakdown of the age groups by gender analysis shows that this imbalance is spread across the age range. In the under 20 years category the figures are Male - 72% and Female - 28%. In the 20-29 years group the imbalance is at its greatest. The figures are Male - 85% and Female - 15%. In the last age category (over 30) there were 59% Male and 41% Female. From these results the imbalance seems particularly stark in the 20-29 years age range. Looking at the statistics for women from a different perspective indicates the same tendency. Analysis of the age distribution by gender shows that there is a greater proportion of the women in the under 20 years category compared to the other two groups. Indeed, in this group 47% of all females were to be found compared to a figure of 38% of all the males. In the 20-29 years group the figures for males show 40% of their total number (females 19%) and 18% in the over 30 group (females 33%). These figures do indicate that there are greater difficulties for visually impaired women who wish to take part in education and training, particularly in the 20-29 years age range.
This information was also intended for cross-referencing with other data to see whether there were any gender differences observable in the returns.

Question A3 - Are you in the age group - under 20, 20-29, or over 30?

The Chi-square test showed no tendency for one age group to be more strongly represented than another. The first age category of under twenty years was chosen because the traditional further education student is aged from 16-19. It was important to be able to distinguish this group from other students in the survey population. There were 41% in the Under 20 category, 34% in the 20-29 group and 22% in the Over 30 age range. This information was also required for cross-referencing purposes. It was interesting to note that there were nearly as many respondents in the 20-29 years category as in the under 20 years group. Indeed, if the 20-29 and the Over 30 categories are added together, the under 20 year old students become the minority. It may be that some visually impaired students are behind their sighted peers in regard to the age at which they obtain the usual school leaving qualifications. It has been acknowledged that it often takes visually impaired pupils longer to attain educational qualifications. This is often due to the fact that accessing information is generally a slower process for someone with visual difficulties. For this reason they may be slightly older when they enter further education.

The pattern of returns may also reflect that further education offers a second chance to mature applicants who, for a variety of reasons (including visual problems), have not achieved their potential in the secondary sector. F.E.
also offers a traditional route for people who are undertaking a change of direction in their careers. Often this career change is forced on individuals who develop visual difficulties well into maturity. These figures reflect the view of many writers that further education has expanded to offer opportunities to the over 19 year age group and that these students make up, "about half the students in F.E." (Chitty, 1991).

Question A4 - Are you on a full-time course?

The large majority of respondents (71%) were on full-time courses. 29% indicated that they were following a part time course. There was a minor difference in the responses of the female students compared to the males with a slightly higher percentage of all the females on full time courses (76% compared to 70% of the males). This was of interest as the author was looking for further evidence of gender imbalance in terms of part time and full time courses. Obviously with far fewer women students in total there was such an imbalance in these figures. 66% of the full time student were male as against 29% who were female. But this point has already been established and the author was looking for any tendency for women to be better represented on part time courses rather than full time ones. In fact there appears to be no such tendency. The overall results indicate a greater proportion of all the women are on full time courses as compared to the men.

Looking at the students on full time courses in terms of age there is a very consistent pattern across the age groups. The analysis shows 75% of the students on full time courses in the under 20 years category, 70% for the 20-29 years group, and 71% for the over 30 year olds.
SECTION A - BIOGRAPHICAL INFORMATION

QUESTION A.1
DO YOU USE - PRINT; BRAILLE; OR BOTH

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>NUMBER</th>
<th>PERCENT</th>
<th>CHI-SQ</th>
<th>DF</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRINT</td>
<td>66</td>
<td>84%</td>
<td>95.56</td>
<td>2</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>BRAILLE</td>
<td>8</td>
<td>10%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOTH</td>
<td>3</td>
<td>4%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

QUESTION A.2
ARE YOU - MALE; FEMALE

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>NUMBER</th>
<th>PERCENT</th>
<th>CHI-SQ</th>
<th>DF</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALE</td>
<td>57</td>
<td>72%</td>
<td>15.71</td>
<td>1</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>FEMALE</td>
<td>21</td>
<td>27%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

QUESTION A.3
ARE YOU IN THE AGE GROUP - UNDER 20; 20-29; OVER 30

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>NUMBER</th>
<th>PERCENT</th>
<th>CHI-SQ</th>
<th>DF</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNDER 20</td>
<td>32</td>
<td>41%</td>
<td>4.61</td>
<td>2</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>20-29</td>
<td>27</td>
<td>34%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OVER 30</td>
<td>17</td>
<td>22%</td>
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</tbody>
</table>

QUESTION A.4
ARE YOU ON A FULL-TIME COURSE

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>NUMBER</th>
<th>PERCENT</th>
<th>CHI-SQ</th>
<th>DF</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>FULL-TIME</td>
<td>56</td>
<td>71%</td>
<td>12.96</td>
<td>1</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>PART-TIME</td>
<td>23</td>
<td>29%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Question A5 - Do you get support for your course from a - Special Needs Teacher, Visual Impairment Specialist, RNIB Student Officer, Any Other?

47% of the survey indicated that they received support from a specialist in visual impairment. This was the best supported option. The next highest response was for Special Needs staff. 38% of the returns stated that assistance was given by a Special Needs teacher at their further education college. A small number of students (10%) mentioned more than one support person. Of these, 6% said they received help from a Special Needs teacher and from a Specialist in Visual Impairment. It is likely that this is where local authority visual impairment support staff have links into the further education college or where there is a visual impairment institution operating a link scheme.

These figures for support staff seem to be on the high side given that there was no statutory responsibility for a local education authority to provide such specialist support for students beyond the age of 19. Even up to this age support is not a statutory right in the sense that the statementing process does not carry over into mainstream further education. In practice many local education authorities do extend support to students with special needs in terms of visual impairment in this area.

In the Any Other support personnel category there was quite a large response. 15% indicated that the appropriate terminology for the person providing their support was not in the other options. The most popular title amongst these (5%) was for one that included the term "support", such as support assistant. Next was the title "Facilitator" (4%). 3% of respondents indicated that their support needs were being addressed by their "Tutor". This probably indicated that the standard personal tutor system within a college was being extended to fulfil a special needs support role, too.
1% of the students stated that a "Care Officer" had this role and another 1% indicated a "Special Education Assistant" carried it out.

It was interesting to note that just a few (4%) of the students in the survey had obtained support from a RNIB Student Advisory Officer. Traditionally these officers have worked in the higher education sector rather than in further education. Their role has been evolving and now clearly encompasses the F.E. area. It may be that this fairly recent change has not yet worked its way through to many students on the ground.

Question A6 - The equipment that would help you on your course is - Close Circuit Television (CCTV), Manual Brailier, Electronic Braille Notetaker, Portable Computer, Portable Tape Recorder, Reading Machine, Low Vision Aids (LVAs), Any Other.

This question focussed on the equipment needs of students. Not surprisingly, the most popular item was the portable computer (65%). These can be used by both print and Braille users and have a usefulness as a study aid recognised widely by almost all students whether visually impaired or not. Low Vision Aids (56%) were the next most popular item. This reflected the fact that the majority of the respondents in the survey (84%) were print rather than Braille users. It is interesting to note that the two top categories from this item are so different. Portable computers can be seen as the glamorous, 'high tech' part of the equipment used by visually impaired students while Low Vision Aids such as hand held magnifiers are very much in the 'low tech' area. This data can help to undermine the simplistic idea that computing developments can solve all the problems faced by individuals with visual impairments.
Two items scored very closely at 48% and 49%. These were the portable tape machine (49%) and the Close Circuit Television (48%). This high response for the CCTV again reflected the fact that the majority of respondents were print users. It is perhaps less obvious that portable tape recorders would be as popular. Again, this finding helps undermine stereotypical reactions to visual impairment. It is not just non-print users who find such items useful. An analysis of the result by cross referencing with Braille and print use shows that 82% of the respondents who wished to use portable tape machines were print users. Typically, a small tape machine is used for recording notes in class where the student cannot see the board and has asked the Lecturer to verbalise the board contents as they are written. The same student may well have few or even no difficulties with near vision used for reading and writing but marked difficulties with distance work such as reading from the board.

The next most popular choice was for reading machines. This option recorded 20% support. Again, this was a higher level of choice than would have been anticipated from the percentage of Braille users who might be thought of as the only people likely to use such machines. It seems to be another reminder not to take a simplistic 'either/or' approach to study equipment for visually impaired individuals. Another aspect of this equipment is that the scanned text, which is read out by the synthetic voice on the PC, can also be stored to disc. This can be a very useful feature for any student to use. Some machines have the added facility of scanning images. In the author's experience many visually impaired students work very effectively with desk top publishing programmes importing graphic images via such reading machines to improve the presentation of their work.
10% of the survey population indicated that portable electronic braille notetakers would be valuable to them in terms of study needs. It is convenient to note that this percentage is the same as that for Braille users in the survey. However, this is too simplistic. In fact the total percentage of Braille users including those that make use of Braille and Print is 14%. As already stated, some Braillists will prefer to use a QWERTY input portable computer because of the advantages it has over the Braille input machines. Perhaps less obvious is the preference print users may have for a Braille machine. Cross referencing the survey responses demonstrates that those wishing to use electronic Braille are not restricted to those for whom Braille is the preferred medium. From his own experience, the author knows that some visually impaired students with a reasonable degree of residual vision and who are print users, still find such pocket sized Braille computers very useful. The input in Grade 2 Braille is much faster than it could ever be with a QWERTY keyboard due to the contractions which are like a form of short hand. It is interesting to note that these contractions were originally (in the nineteenth century) designed not so much to save time as to save space on paper as Braille is such a bulky medium. With Braille computers, however, this time saving is probably the more important advantage. For fast notetaking they are unbeatable and of course they have full wordprocessing facilities. This is all contained in a very small package. In some cases it is certainly possible to carry one in a pocket. It is the combination of size, power and speed of input which many find attractive.

This option included machines such as the American Braille n' Speak, the Australian Eureka, and the British Jotta. Recently this range has been increased by the addition of a braille input notebook type 386 computer by an American
company. Incidentally, this range is a good example of the international interest in the production of special equipment for visually impaired users. The range has expanded dramatically over the last five years and the increased activity and competition seems to have produced greater selection and more competitive prices.

64% of the survey population who use Braille indicated that Manual Braillers were important items of equipment. It may seem at first impression that individuals who use electronic Braille will not also want to use the more traditional manual Braillers, the most common of which is the American Perkins machine. However, many users of such equipment, in the author's experience, also make extensive use of the electronic machines mentioned above. In the survey 55% of the Braillists indicated an interest in laptop computers and 64% were interested in electronic Braille. It is clear that there is no mutual exclusivity which means that a manual Braillist will not also use electronic media. It seems that certain equipment is better suited to particular situations. The manual machine has the advantage of instant and exact feedback and, of course, is not dependent on a battery or mains supply of electric power. In the Any Other section 3% of respondents mentioned the Mountbatten Brailler which is something of a crossover product between the more traditional manual machine and the newer Braille computer.

Other items mentioned in the Any Other option were Digital Scientific Measuring Devices (1%), Soft Braille Display for a computer (1%), Talking Calculators (1%) and Copyholders (1%).
SECTION A - BIOGRAPHICAL INFORMATION

QUESTION A.5

DO YOU GET SUPPORT FOR YOUR COURSE FROM A -

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>NUMBER</th>
<th>PERCENT</th>
<th>CHI-SQ</th>
<th>DF</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECIAL NEEDS TEACHER</td>
<td>30</td>
<td>38%</td>
<td>36.15</td>
<td>3</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>V.I.SPECIALIST</td>
<td>37</td>
<td>47%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RNIB STUDENT OFFICER</td>
<td>3</td>
<td>4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANY OTHER</td>
<td>12</td>
<td>15%</td>
<td></td>
<td></td>
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</tbody>
</table>

QUESTION A.6

THE EQUIPMENT THAT WOULD HELP YOU ON YOUR COURSE IS -

<table>
<thead>
<tr>
<th>RESPONSE (RANKED)</th>
<th>NUMBER</th>
<th>PERCENT</th>
<th>CHI-SQ</th>
<th>DF</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PORTABLE COMPUTER</td>
<td>51</td>
<td>65%</td>
<td>77.88</td>
<td>7</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>2. LOW VISION AIDS</td>
<td>44</td>
<td>56%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. PORTABLE AUDIO TAPE</td>
<td>39</td>
<td>49%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. CCTV</td>
<td>38</td>
<td>48%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. READING MACHINE</td>
<td>18</td>
<td>23%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. ELECTRONIC BRAILLE</td>
<td>8</td>
<td>10%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. MANUAL BRAILLER</td>
<td>7</td>
<td>9%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| ANY OTHER                       | 51     | 65%     |        |    |       |
| 1. MOUNTBATTEN                  | 2      | 3%      |        |    |       |
| 2. DIGITAL MEASURING            | 1      | 1%      |        |    |       |
| 3. NON-GLARE SCREEN             | 1      | 1%      |        |    |       |
| 4. PORTABLE PRINTER             | 1      | 1%      |        |    |       |
| 5. TALKING CALCULATOR           | 1      | 1%      |        |    |       |
| 6. SOFT BRAILLE                 | 1      | 1%      |        |    |       |
| 7. PHOTO ENLARGING              | 1      | 1%      |        |    |       |
| 8. COPYHOLDER                   | 1      | 1%      |        |    |       |
Question A7 - You have no difficulties in obtaining the special equipment that you need for your course.

This question sought to gauge the extent to which the students were able to obtain the equipment they needed. Only 4% of respondents strongly agreed with the statement. This is not surprising as education budgets rarely stretch to provide all the special equipment that a student would wish to use. Another factor acting against a high degree of satisfaction is the availability of such equipment in that it is constantly being updated. There will always be new equipment coming out and it is very difficult for providers to be abreast of product development.

34% of the students agreed with the statement and another 32% were neutral. In the disagree category there were 20% and in the strongly disagree a further 9%. This presents a picture tending towards an overall Neutral/Agree position. Analysing the figures from the perspective of the Braille using student and the print user indicates that there are generally similar percentage rates of satisfaction in the first four categories of response. The Braillists levels are slightly lower in these. However, in the last category representing the greatest degree of dissatisfaction there is a marked difference. While only 5% of the print users register this high degree of concern, as many as 36% of the Braillists express strong disagreement with the statement.

It may be that students who are using Braille have the greatest need for special equipment and that because of their low incidence in the college population, some institutions are reluctant to provide it. The provision of special equipment obviously has important resourcing implications. The argument has often been made (Low, 1984, Todd and Spragg, 1991) that effective integration of visually impaired students probably requires that certain
colleges establish a proper resource and that this is unlikely to be possible in every college.

Question A8 - You have no difficulties in obtaining materials in Suitable Print or Braille.

This question was concerned with the particular medium used by the student. There can be a simplistic tendency to think that if a visually impaired individual does not use Braille then Large Print must be the preferred medium. In practice, "Large Print" is not a very good description of the range of print needs that are relevant to visually impaired students who use their residual vision. Suitable print seems a better description. For example students with Retinitus Pigmentosa (R.P.) may require print of normal size but possibly better contrast than normal. A student with Albinism might require reduced glare paper (probably of a particular colour) rather than the standard white.

The item deliberately used the phrase "few difficulties" rather than "no difficulties" in relation to the provision of this service. It was felt that the latter wording would be too extreme for the particular subject matter concerned. Even the best reprographic system for visually impaired students will suffer from the problem of late requests for transcription of work. The item sought to establish how effective reprographic support was in producing materials in the appropriate medium. This is often seen as the "nuts and bolts" issue in any support structure and is clearly fundamental to the success of any scheme. Only 6% of the respondents strongly agreed with the statement. However, an encouraging 47% agreed with it. There were 27% in the neutral and 16% in the disagree area. Only 3% of the survey population strongly disagreed with the statement.
In general the print users were to some degree more satisfied with the arrangements to provide materials than were the students who used Braille. There was little difference in the top and bottom response groups. The percentage rates for both sets of students was about the same in the Neutral category. Differences were more noticeable for those students who agreed with the statement. Here there were 52% of print users and only 27% of Braillists. In the Disagree section this pattern was to some extent reversed with only 14% of the print using students and 27% of the Braille users.

This item seems similar to the responses to the previous item on equipment and indicates that the students using print as their medium are rather more satisfied than the others. There is obviously some cause for concern here but this finding needs to be put into the general context of the overall levels of satisfaction indicated by the students. This item indicated that satisfaction levels were tending to the Neutral/Positive area. It does seem the case that satisfaction levels are higher on the production of materials than they are for the availability of special equipment.
SECTION A - BIOGRAPHICAL INFORMATION

QUESTION A.7

YOU HAVE NO DIFFICULTIES IN OBTAINING THE SPECIAL EQUIPMENT THAT YOU NEED FOR YOUR COURSE.

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>NUMBER</th>
<th>PERCENT</th>
<th>CHI-SQ</th>
<th>DF</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRONGLY AGREE</td>
<td>3</td>
<td>4%</td>
<td>28.92</td>
<td>4</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>AGREE</td>
<td>27</td>
<td>34%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEUTRAL</td>
<td>25</td>
<td>32%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISAGREE</td>
<td>16</td>
<td>20%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRONGLY DISAGREE</td>
<td>7</td>
<td>9%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

QUESTION A.8

YOU HAVE NO DIFFICULTIES IN OBTAINING MATERIALS IN SUITABLE PRINT OR BRAILLE FOR YOUR COURSE.

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>NUMBER</th>
<th>PERCENT</th>
<th>CHI-SQ</th>
<th>DF</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRONGLY AGREE</td>
<td>5</td>
<td>6%</td>
<td>50.72</td>
<td>4</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>AGREE</td>
<td>37</td>
<td>47%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEUTRAL</td>
<td>21</td>
<td>27%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISAGREE</td>
<td>13</td>
<td>16%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRONGLY DISAGREE</td>
<td>2</td>
<td>3%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
QUESTION A.1
DO YOU USE - PRINT; BRAILLE; OR BOTH

QUESTION A.2
ARE YOU - MALE; FEMALE
QUESTION A.3
ARE YOU IN THE AGE GROUP - UNDER 20; 20-29; OVER 30

QUESTION A.4
ARE YOU ON A FULL-TIME COURSE
QUESTION A.5
DO YOU GET SUPPORT FOR YOUR COURSE FROM A -

NUMBER

0 12 24 36 48

S N TEACHER  V I TEACHER  RNIB OFFICER  ANY OTHER

RESPONSE

QUESTION A.6
THE EQUIPMENT THAT WOULD HELP YOU ON YOUR COURSE IS -

NUMBER

0 12 24 36 48

PORTABLE COMPUTER  LOW VISION AIDS  PORTABLE TAPE  CITY  READING MACHINE  ELECTRONIC BRAILLE PERKINS

RESPONSE
QUESTION A.7
YOU HAVE NO DIFFICULTIES IN OBTAINING SPECIAL EQUIPMENT

QUESTION A.8
YOU HAVE FEW DIFFICULTIES IN OBTAINING SUITABLE MATERIALS
24. Data Analysis - Section B.

24.1 Results.

This section is sub-titled, "Your Views on Support Services for Visually Impaired Students in Mainstream Further Education". It looks at the commonly quoted factors that are involved in the successful integration of visually impaired students. It was also intended to discover other possible services which have not been given consideration to date. The intention of this section was to see to what extent the views of students coincided with those of professionals in this specialist area. Much of the research in this area has concentrated on the latter.

It is important at this stage to make a general observation about the items in this section. The services covered can all be seen as intrinsically good things. The author would expect most visually impaired students to see them all as useful contributions to more effective integration in the mainstream. The responses in the survey tended strongly towards the positive categories in almost all cases although, obviously, all respondents had the opportunity for negative responses. Indeed, just a glance at the graphical presentation of the results for this section show this very clearly. A large weight of responses are in the top two positive categories.

The responses to a similar list of services that Patten (1988) obtained from professionals in the field were all strongly positive, too. It is likely that it is in the nature of the subject matter that positive responses will be returned. The author notes that in Patten's research a three category response range was used to place factors in a rank order. By making the statements in this section more
extreme and using a five point category response it was hoped to produce a wider spread of responses in order to rank them clearly and so help to discover the relative value of the services covered. The information will be of value in adding this student view to the data that already exists (but which largely overlooks this particular perspective).

Question B1 - Suitable Print or Braille materials are very important.

In a sense this was almost a self-evident statement in that without these facilities no integration scheme could possibly succeed. All but one of the responses in the survey were in the Strongly Agree (71%) and Agree (27%) categories. Even the lone response on this item was in the Neutral area. There seemed to be little difference between the Braille users and the print users in their responses to this item. 64% of the students who used non-print methods responded in the most positive category as did 73% of the students who used print. To some degree this was contrary to expectations in that it was assumed that Braille users would have a greater dependence on the transcription of work materials into tactile forms. This was not borne out by these responses. This perhaps further indicates how easily one can underestimate the importance of the correct print type for visually impaired students making use of residual vision. On this evidence these individuals regard effective production of materials at least as highly as their non-print using colleagues.
Question B2 - In-class ancillary assistants are very important for success.

A large proportion (67%) of the survey population responded positively to this item (strongly agreed - 30% agreed - 37%). A further 20% were neutral and 11% of responses were in the disagree category. It may be that the views here are more coloured by the students' own experiences than with some of the other items. Students who use ancillary assistance themselves may value it highly while those who have no such need may not appreciate the difference it can make. Overall, the two positive response categories combine to present a strong case for this item in the survey. By analysing the results by cross referencing to the preferred medium of students some difference is discernible. The overwhelming majority of Braille using respondents (91%) indicated a positive reaction to the item. The print users, while still showing a positive majority (62%) were less enthusiastic in their support for ancillaries. This pattern of responses is one that might have been anticipated in that those students with the greatest degree of visual disability would be expected to make more use of ancillary services.

The use of ancillaries can be a sensitive issue because of the possible intrusive nature of the role. It can make full integration for the individual more difficult in the sense that another professional is involved and to that extent differentiates or distances the student from the common learning experience. There is also a concern about student dependence rather than independence being fostered by some arrangements. These fears are not necessarily well founded but clearly there is the potential for these disadvantages to be felt unless suitable working arrangements have been put in place. These potential problems could be keenly felt by students. It seems to the author that this is one of those areas where the student view is of the very first
importance. Despite possible disadvantages, the students' evaluation of the value of ancillaries was on the whole high, and for Braille users, very high.

Question B3 - Specialist teachers for visual impairment are very important.

In the Strongly Agree category 24% of the respondents indicated this highest level of support for the visual impairment specialists. A further 51% responded in the Agree category. There was a 19% response for the Neutral option and 5% for Disagree. An analysis of these results by cross referencing to preferred medium shows very little difference. 73% of the non-print users responded in the top two positive categories (18% Strongly Agree, 55% Agree) and 76% of the print users (24% Strongly Agree, 52% Agree). This seems quite a high overall positive response figure (75%) given that specialists in visual impairment are not commonly based in further education colleges. More typically, individual colleges would be serviced by a peripatetic specialist in visual impairment from the general local authority support service. These teachers usually have large case loads and will not normally be able to spend much time in direct support in the classroom.

Where there is a specialist institution near to a mainstream further education college links between the two are becoming more common. Examples of this in the Midlands area are to be found in Hereford where there is the Royal National College, a specialist establishment for visually impaired students. The Exhall Grange school at Coventry has links with mainstream F.E. in the city. At Birmingham the Queen Alexandra College for visually impaired young people works with mainstream further education and a similar development
has taken place at Loughborough with the mainstream further education college and the RNIB Vocational College.

From the item on support personnel in the first section of the instrument it was apparent that nearly half of the respondents received assistance from Visual Impairment specialists. For the remainder, even with such link developments and local peripatetic services, it is unlikely that their colleges will have much direct in-class contact with Visual Impairment specialists. It is interesting in the light of this that there should be such a strongly positive response well above the 50% level that might have been anticipated by the number of students known to be in contact with specialists.
### SECTION B - FACTORS FOR SUCCESS

#### QUESTION B.1

**SUITABLE PRINT OR BRAILLE MATERIALS ARE VERY IMPORTANT**

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#### QUESTION B.2

**IN-CLASS ANCILLARY ASSISTANTS ARE VERY IMPORTANT FOR SUCCESS**

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#### QUESTION B.3

**SPECIALIST TEACHERS FOR VISUAL IMPAIRMENT ARE VERY IMPORTANT**

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<td>STRONGLY DISAGREE</td>
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</table>
Question B4. - Specialist equipment is very important for success.

This item could clearly be seen as one of those obviously "intrinsically good" things which you would not expect any student to disagree with who was following a college course. The survey bore this out. There was a full 97% positive response to this question. The graphical presentation of this item demonstrates this very effectively. The full figures are 68% in the Strongly Agree category, 29% in the Agree and the rest (3%) in the Neutral option. Examining the results by gender, preferred medium and age indicate few differences of note. 96% of female respondents were in the positive area (67% Strongly Agree, 29% Agree) 98% of the males (70% Strongly Agree, 28% Agree). 100% of the Braillists (64% Strongly Agree and 36% Agree) and 97% of the print users (71% Strongly Agree, 26% Agree) were in the positive response area.

There was some difference observable in the responses when analysed by age. It seems that students in the 20-29 age range have a marginally stronger appreciation of the value of this equipment than others. While the overall percentages in the positive range of responses are similar (Under 20 years - 94%, 20-29 years - 100%, and Over 30 years - 100%) there is a difference when considering the response pattern in the top two categories. For the students aged between 20 and 29 years 81% chose the most positive category when assessing the value of special equipment. The other aged groups responses were 63% for those aged under 20 years and 65% for those who were over 30. This may indicate that the 20-29 year old students have a slightly fuller knowledge of the scope and potential of this technology. The author had anticipated a possible decline in the appreciation of the value of special equipment in the older age range due to the fact that it was possible that older individuals might
not have the same knowledge and awareness of computerised systems or that these students might have, to some degree, a greater reluctance to use such technology. These results did not bear this out.

The overall results to this item indicate that the advantages of specialist equipment are well known to visually impaired students and very highly valued by them. This ties in with the results of other surveys (e.g. Patten, 1987). There are many writers (e.g. Scott, 1982; Hawkridge, Vincent and Hales, 1985; Hegarty, 1987) who have also noted the importance of this technology for visually impaired students. The survey certainly confirms their views. However, there seems to be a distinction between what students would want to use and what is obtainable in colleges. The pattern of responses to the question in the first section which was concerned with special equipment (A7) was very different to that obtained for this item. The response to A7 showed 59% of respondents indicating a satisfaction level in the neutral to negative area on the question of obtaining special equipment. Clearly there is gap between the technology students would wish to use and what is available to them.

This is always likely to be the case in that new products are appearing all the time and there will be a lead-in period between product development (and promotion) and its availability in any particular college. Of course, in addition to this, there is always the problem of inadequate budgeting for the needs of visually impaired students who are always likely to be numerically small in any one college.
Question B5 - The use of audio tape is very important.

In the first section students were asked about the equipment they would wish to use and portable tape recorders received a 49% response. In the light of this is was not unexpected to find that 54% of the survey population responded in the top two positive response categories for this item. A breakdown of this result by medium preference shows a slightly greater percentage of the Braillists (63%) in the top two positive categories compared to the print users (53%). This might well have been anticipated. However, it may be that the result showing a majority of print users indicating a positive value for audio methods is a little surprising. This perhaps underlines the comments about the use of tape by visually impaired students who make good use of residual vision and is another reminder that expectations of the needs of visually impaired students along simplistic Braille/Print lines are likely to be a distortion. 33% of the students indicated a Neutral position and 6% disagreed with the statement.

Question B6 - In-service training for mainstream teachers is important.

It was interesting to note that there was also a lot of support for this item. The large majority (84%) of the students responded in the positive area (Strongly Agree - 47% or Agree - 37%). 15% of the responses were in the Neutral category and 1% disagreed with the statement. This result confirmed that the need for INSET was as evident to the students as other surveys had indicated that it was to teachers. There is clearly an element in this question that relates to the question of changing staff attitudes. This has been noted in many studies (e.g. Tobin, 1972; Jamieson, 1977; Hegarty et. al., 1981; Bishop, 1987) as a factor of
considerable importance in ensuring the success of integration schemes. The pattern of responses on this item in the survey indicates that respondents certainly value in-service training for college staff and see it as an important means to securing positive attitudes towards visually impaired students.
SECTION B - FACTORS FOR SUCCESS

QUESTION B.4

SPECIALIST EQUIPMENT IS VERY IMPORTANT FOR SUCCESS

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QUESTION B.5

THE USE OF AUDIO TAPE IS VERY IMPORTANT

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QUESTION B.6

IN-SERVICE TRAINING FOR MAINSTREAM TEACHERS IS IMPORTANT

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</table>
Question B7 - Good mobility is very important for success.

There was a strongly positive response to this item. 73% of the students in the survey indicated a positive response with this question (Strongly Agree - 29%, Agree - 44%). Analysing the figures in terms of Braille and print users showed some difference. 91% of the Braillists responded in the positive area (27% Strongly Agree, 64% Agree) while print users registered a 71% positive response (29% Strongly Agree, 42% Agree). To some extent, this difference could be anticipated as non-print users would normally be expected to have greater mobility requirements from a support structure for visually impaired students. Once again, the strongly positive response of the print users is a reminder that simple categorisation of student need based on preferred medium is likely to be misleading.

There was only a 5% negative response (in the Disagree option) and the remainder were Neutral (20%). The quite sizable Neutral percentage rate may indicate that for those students who have no direct need for mobility services themselves, there is less recognition of the value of such services. There can also be a tendency to assume that visually impaired students will have mobility skills in place by the time they enter further education. This may be overlooking the fact that sight problems may well be occurring later in life and the opportunity for obtaining these skills may not be present. In any case, there is still an important need to be met in terms of mobility assistance in learning new routes for someone with good skills who is going into a new college environment.

Few surveys have given this factor much priority. (Patten's 1988 survey did mention mobility, but it was last on a ranked list). It may be that students with direct experience of the difficulties in this area have a different
view on this than educational specialists. Mobility is an area that crosses over the demarcation of responsibility between education and other services. It is often the local social services department that will have this responsibility. This may be another factor in the lower evaluation by educational professionals. Clearly getting to the classroom and moving about effectively within the college is likely to be of considerable importance to students. It is clear that the majority of students in the survey did fully appreciate the significance of good mobility support.

Question B8 - Financial guidance is very important.

Many writers (Holmes and Aprahamian, 1981; Adams, 1986, Cooper, 1986) have noted the importance of this factor. The students in this survey would seem to share this view. Although 18% of the students indicated a Neutral response to this item and there was a 1% return in the Disagree option, all the rest fell in the Strongly Agree (35%) or Agree (44%) areas. This large 79% positive reaction underlines the importance of guidance on funding. In terms of gender there was only a two percent difference in the positive responses (female - 81%, male 79%). When looking at the responses by age groups there is a more marked difference in the results. Interestingly it is the middle group which has indicated the greatest positive value. The figures are 76% of students who are under the age of 20 years gave a positive response to this item; 89% of those aged in the 20-29 years range did the same; and 76% of the students aged over 30 years. This may be a reflection that as students move from their teenage years the details of the funding arrangements become ever more complex. Local authority funding usually comes to an end for students at the age of 19 years. To some extent funding for courses for students till this time is
reasonably straightforward. Beyond this age the situation becomes more complicated. These complications have been described in Section 18. Certainly if a student, for example, has a family and mortgage arrangements to cope with in addition to course fees and expenses then it is likely that expert financial advice will be even more valued.

It does seem logical to suppose that if the funding for a course poses major problems and if guidance is not readily available, then students may not even begin the course. In these circumstances effective integration of visually impaired individuals is by definition a non-starter.

Question B9 - RNIB Advisory Officers are very important.

The responses to this item were much more spread across the category range than was the case with any other question. They were also less strongly positive. 15% of the students indicated a strong agreement with the statement. Another 32% indicated agreement. However, 41% were Neutral, 8% disagreed and 4% strongly disagreed.

The RNIB student officers have traditionally been associated with the higher education sector. In recent years there has been an attempt to increase their services much more in the further education area. The results of this small survey seem to indicate that there is some work yet to be done before these officers are regarded as very important to successful integration of visually impaired individuals in F.E.
SECTION B - FACTORS FOR SUCCESS

QUESTION B.7
GOOD MOBILITY SUPPORT IS VERY IMPORTANT FOR SUCCESS

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QUESTION B.8
FINANCIAL GUIDANCE FOR STUDENTS IS VERY IMPORTANT

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QUESTION B.9
RNIB STUDENT ADVISORY OFFICERS ARE VERY IMPORTANT

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Question B10. A personal reader service is very important for success.

Only 1% of the survey population recorded a negative response to this item. 27% of the students in the survey placed this service in the top positive response category and 35% in the second highest. Given that the large majority of the respondents were print rather than Braille users, this 62% positive reaction would, perhaps, seem surprising. Analysing the result by cross referencing with Braille or print use the anticipated pattern of responses does become apparent. A full 100% of the Braillists (55% Strongly Agree, 45% Agree) were in the positive area. For the print users the figures were 56% in the two positive categories (Strongly Agree 23%, Agree 33%).

This majority of print users positively valuing reader services is, once again, a useful reminder not to categorise visually impaired individuals into simple print/non-print study methods. Clearly, many print users appreciate the value of reader services. This appreciation may be a theoretical one where a student can see that the service may well assist others even if no direct use is being made by the student concerned. On the other hand, the print using student may well benefit from them directly. This finding ties in well with the fact that many of the respondents (49%) regarded the portable tape recorder as a useful piece of equipment. Of this number 82% were print users. Often reader services are provided in both personal one to one form and reading to tape. This survey seems to confirm the importance of audio study methods for a wide range of visually impaired students.
Question B11. - Are there important support services not mentioned above?

The intention of this question was to confirm that the services indicated in the questionnaire were broadly the ones that students recognised as valid. It was also hoped that other services could be identified which had not received wide recognition to date.

There was a 75% response in the No category. This seems to be some confirmation here that the services that have been identified to date do enjoy recognition as relevant by the students themselves. 20% offered further suggestions for support services. These were for better Information on Support Services (3%); Specialist Employment Advice (3%); Improved Grants (3%); Specialist Counselling (1%); Guide Dog Facilities (1%); Personal Development Courses (1%); Student Involved Pre-course Planning (1%); Transport Assistance (1%); and provision of Amanuensis (1%).

24.2 Weighting the responses.

Using a weighting system of five points for a Strongly Agree response through to one point for a Strongly Disagree response it is possible to provide a rank order for this section. The maximum total would be 395 points and the minimum 79 points. The percentage figures are percentages of the maximum favourable score. The services in descending order came out as follows: -
1. Special Equipment (93%);
2. Suitable Print/Braille Materials (93%);
3. INSET (86%);
4. Financial Guidance (82%);
5. Mobility Services (79%);
6. Visual Impairment Specialists (78%);
7. Ancillaries (76%);
8. Personal Reader Service (76%);
9. Tape Services (69%);
10. RNIB Student Officers (69%).

There is a danger that ranking the results could be to some degree misleading as it may imply distinctions greater than in fact exist. The difference between the first ranked item and the fourth, for example, may be very small in practice.
SECTION B - FACTORS FOR SUCCESS

QUESTION B.10
A PERSONAL READER SERVICE IS VERY IMPORTANT FOR SUCCESS

RESPONSE          NUMBER  PERCENT  CHI-SQ  DF  SIG

STRONGLY AGREE   21 27%  50.85  4  <0.01
AGREE            28 35%
NEUTRAL          28 35%
DISAGREE         0  0
STRONGLY DISAGREE 1  1%

QUESTION B.11
ARE THERE IMPORTANT SUPPORT SERVICES NOT MENTIONED ABOVE

RESPONSE          NUMBER  PERCENT  CHI-SQ  DF  SIG

YES              16 20%  23.52  1  <0.01
NO               59 75%

SECTION B - WEIGHTED FACTORS

MAXIMUM FAVOURABLE SCORE - 395, MINIMUM - 79

PERCENTAGE OF MAXIMUM FAVOURABLE SCORE

RESPONSE          NUMBER  PERCENTAGE

1. EQUIPMENT  368  93%
2. PRINT/BRAILLE 367  93%
3. INSET  339  86%
4. FINANCIAL ADVICE  324  82%
5. MOBILITY  311  79%
6. V.I.SPECIALISTS  308  78%
7. ANCILLARIES  302  76%
8. PERSONAL READERS  302  76%
9. AUDIO TAPE  273  69%
10. RNIB OFFICERS  271  69%

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QUESTION B.1
SUITABLE PRINT OR BRAILLE MATERIALS ARE VERY IMPORTANT

QUESTION B.2
IN-CLASS ANCILLARY ASSISTANTS ARE VERY IMPORTANT FOR SUCCESS
QUESTION B.3
SPECIALIST TEACHERS FOR VISUAL IMPAIRMENT ARE VERY IMPORTANT

QUESTION B.4
SPECIALIST EQUIPMENT IS VERY IMPORTANT FOR SUCCESS
QUESTION B.5
THE USE OF AUDIO TAPE IS VERY IMPORTANT

NUMBER

QUESTION B.6
IN-SERVICE TRAINING FOR MAINSTREAM TEACHERS IS IMPORTANT

NUMBER
QUESTION B.7
GOOD MOBILITY SUPPORT IS VERY IMPORTANT FOR SUCCESS

QUESTION B.8
FINANCIAL GUIDANCE FOR STUDENTS IS VERY IMPORTANT
QUESTION B.9
RNIB STUDENT ADVISORY OFFICERS ARE VERY IMPORTANT

RESPONSE:

QUESTION B.10
A PERSONAL READER SERVICE IS VERY IMPORTANT FOR SUCCESS

RESPONSE:
QUESTION B.11
ARE THERE IMPORTANT SUPPORT SERVICES NOT MENTIONED ABOVE

SECTION B - WEIGHTED FACTORS
MAXIMUM FAVOURABLE SCORE - 395, MINIMUM - 79

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25. Data Analysis - Section C.

25.1 The Results.

This section is entitled, "Special Education and Mainstream Education - Your Views". It attempted to determine the views of the respondents towards integrated further education provision for visually impaired individuals. The five questions in this section make up a Likert type scale. The intention is to use the results of this to gauge the strength of attitudes in this area. The question are a mix of positive and negative items. There are three positive statements and two negative ones. The scoring has obviously been reversed for the latter.

Question C1 - Visually impaired people get the best education and training in mainstream further education. (Positively framed item).

This question obtained a good spread of responses. Interestingly, 34% of the respondents indicated a Neutral position on this item. It is likely to be the case that some of them will have benefited by separate special education at the secondary level and have open minds on the effectiveness of separate special further education. Looking at the Neutral responses in terms of age groups it was possible to observe some differences. The group most likely to have a definite view on this question was the Under 20 category and the one least likely was the Over 30s. The breakdown of the figures show 22% of the younger group in the Neutral option, 37% of the middle range and 47% of the older group. A factor in this may be that the older two groups could have had more direct experience of separate special education in that mainstream school provision was
not as available for them as a choice as it has been for the Under 20s group.

There was a 43% positive response (6% of the survey were in the Strongly Agree option and a further 37% were in the Agree category). The negative area attracted a 23% response (19% in the Disagree area and a further 4% in the Strongly Disagree category). Looking at these results in terms of Braille and print users there seems to be a slightly more negative reaction from students using tactile forms. It seems reasonable to argue that Braille users are more likely than other visually impaired students to have had some experience of separate special provision at some time in their educational career. This may explain the slight variation in the results. It may also be, of course, that these students have slightly greater reservations about the mainstream experience. Whereas 46% of the print users selected a positive option, 36% of the non-print users did so. In a similar way, 22% of the print users registered negative reactions as against 36% by the Brailleists. An analysis by gender indicates minor differences which could indicate a marginally stronger response in favour of mainstream provision by male students. 38% of the females indicated a positive reaction to the item whereas 46% of the males did so. Another 38% of the female respondents selected the Neutral option as did 32% of the males students. The negative reaction by males and females was very closely similar. There was a 24% negative reaction by female students and 23% one by males.
Question C2 - Separate special colleges give visually impaired people the best education. (Negatively framed item).

A similar pattern of responses was recorded for both this item and the previous one, although the pattern was reversed for C2 as it is negatively framed. This was expected as the statements were really the opposite sides of the same proposition. There was, as before, quite a spread of views indicated. The Neutral category again attracted a large response (46%) probably for reasons mentioned above. This item was the first negatively worded statement in the questionnaire. It may be that this has to some degree jarred with some respondents and that they may have found it difficult to reject a proposition and moved to a Neutral position as a reaction. This tendency towards the middle ground was seen least in the older age range where just 24% of the respondents selected the Neutral option. It is interesting that this is the reverse of the finding for the first item where this age group recorded the highest Neutral percentage. It may be that while in C1 these older students did not feel they had sufficient mainstream experience to comment on the value of integrated further education, in question C2 which called more upon their view of segregated provision they felt better placed to make a definite observation. The Neutral figures for the other students were 50% for those under 20 years of age and 56% for the respondents in the 20-29 years bracket.

The weight of the remaining responses tended to be towards a negative view (33%) of this statement which supported segregated further education. 25% were in disagreement with the statement and 8% were in the Strongly Disagree area. This was most clearly seen in the case of the students in the Over 30 group. 47% of these students chose options critical of segregated provision. This compares with 31% of
the students in the Under 20 category and 22% of those in the 20-29 years option. In the positive area there was an overall 20% return which supported segregated special colleges.

An analysis of the results for this item by gender and preferred medium indicate similar patterns to the previous question. There is a tendency towards a less positive view of mainstream provision among the female respondents. 29% of the females selected mainstream positive options as against 35% of the male students. In the same way as in item C1 there was a stronger critical reaction to integration recorded by Brailists. 36% of Braille users were negative towards the idea of mainstream further education as opposed to 19% of the print users.

Question C3 - Visually impaired people are better able to take a full part in society if they've been taught with sighted students. (Positively framed item).

The overall response to this item was very positive. The large majority (84%) indicated a positive reaction to the statement. (30% chose the Strongly Agree option and 54% the Agree category). The group that felt most positive about the item was the 20-29 years of age one. This group recorded a 96% positive response (as against 75% for the Under 20 category and 83% of the over 30 year old students). This seems a very high overall level of support for the idea that social integration is likely to be more effective in the mainstream. Obviously, the fact that all these students had chosen to continue their education in mainstream institutions helps to explain the strength of the positive reaction. Looking at the figures from a gender perspective there was a marginally stronger positive reaction from the male students (males - 88% positive responses, females -
76%). It was interesting to note that Braille users were slightly more positive in their response than print users (Braillists - 91%, print users - 85%). In the two previous items the non-print students had been less positive than their print using colleagues.

The Neutral and negative responses were relatively small. The Neutral response was 11% and the negative percentage was just 4% (Disagree - 4%, Strongly Disagree - 0%). This statement on the value of mainstreaming was clearly more positively received than the first two questions in this section. This may be because the statement could be read in terms of a theoretical proposition on the benefits of integration without having to consider the practical aspects of mainstream provision. As such it is likely that a more positive result will be returned.
SECTION C - ATTITUDES TO INTEGRATED PROVISION

QUESTION C.1
VISUALLY IMPAIRED PEOPLE GET THE BEST TRAINING AND EDUCATION IN MAINSTREAM FURTHER EDUCATION COLLEGES

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>NUMBER</th>
<th>PERCENT</th>
<th>CHI-SQ</th>
<th>DF</th>
<th>SIG</th>
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<tbody>
<tr>
<td>STRONGLY AGREE</td>
<td>5</td>
<td>6%</td>
<td>36.76</td>
<td>4</td>
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<tr>
<td>AGREE</td>
<td>29</td>
<td>37%</td>
<td></td>
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<tr>
<td>NEUTRAL</td>
<td>27</td>
<td>34%</td>
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<td></td>
</tr>
<tr>
<td>DISAGREE</td>
<td>15</td>
<td>19%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRONGLY DISAGREE</td>
<td>3</td>
<td>4%</td>
<td></td>
<td></td>
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</table>

QUESTION C.2
SEPARATE SPECIAL COLLEGES GIVE VISUALLY IMPAIRED PEOPLE THE BEST EDUCATION

<table>
<thead>
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<th>CHI-SQ</th>
<th>DF</th>
<th>SIG</th>
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<td>AGREE</td>
<td>15</td>
<td>19%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEUTRAL</td>
<td>36</td>
<td>46%</td>
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<td></td>
</tr>
<tr>
<td>DISAGREE</td>
<td>20</td>
<td>25%</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>STRONGLY DISAGREE</td>
<td>6</td>
<td>8%</td>
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QUESTION C.3
VISUALLY IMPAIRED PEOPLE ARE BETTER ABLE TO TAKE A FULL PART IN SOCIETY IF THEY'VE BEEN TAUGHT WITH SIGHTED STUDENTS

<table>
<thead>
<tr>
<th>RESPONSE</th>
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<th>DF</th>
<th>SIG</th>
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<td>30%</td>
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<td>AGREE</td>
<td>43</td>
<td>54%</td>
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</tr>
<tr>
<td>NEUTRAL</td>
<td>9</td>
<td>11%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISAGREE</td>
<td>3</td>
<td>4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRONGLY DISAGREE</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Question C4 - It is impossible for visually impaired individuals to be taught properly in ordinary classes. (Negatively framed item).

The response to this item was strongly negative. The large majority (76%) of respondents indicated either strong disagreement (39%) with the statement or disagreement (37%) with the item. It was interesting to note that Braille users who might be considered to have the most difficulties in the ordinary class were slightly more opposed to the statement than the print users (Braillists - 91%, print users - 73%). There was little discernible difference in the pattern of the returns on this item in terms of gender. An analysis by age group did show that the youngest age category had the least opposition to this negative proposition although they were still strongly against it. The figures were - Under 20 - 65%, 20-29 years - 92%, Over 30 - 87%. Interestingly, 16% positively responded that it was indeed impossible for a visually impaired student to be taught in an ordinary classroom (Strongly Agree - 6%, Agree - 10%).

Overall, the responses to this item make a valuable and very positive statement by individuals who are best placed to answer the criticism sometimes made that the mainstream cannot successfully cater for students with visual impairments. Clearly, from their direct personal experience a large majority of these students felt that it was certainly possible. At the same time the 16% negative view is cause for some degree of concern that effective support arrangements are not in place for all respondents.
Question C5 - The increase in the number of visually impaired people in mainstream further education and training is good news. (Positively framed item).

The very large majority of respondents in the survey (88%) were in the positive area (42% were in strong agreement with this item and 46% responded in the Agree category). A further 5% were neutral about the statement and 7% indicated a negative reaction (Disagree - 6%, Strongly Disagree - 1%). The responses indicated that the male students were marginally more positive about this statement than the females (males - 93% positive responses, females - 76%). Analysis by gender, age and preferred medium showed little other variation in the pattern of results. As with the previous item these results seem a strongly positive statement by respondents on the value of mainstream provision.

25.2 Constructing the Likert-type Scale

This section of the instrument attempted to gauge the degree of respondents' positive or negative attitude on integrated provision for visually impaired individuals in further education.

The five questions in this section have been designed to make up a Likert type scale. The items are a mix of positive and negative items, with three positive statements and two negative ones (the scoring has been reversed for the latter). Given five items and scoring from one point to five points, a range from twenty-five points (strongly positive) to five points (strongly negative) was possible. This range was divided into five point sections to clarify the tabulated presentation of the results.
25% scored in the highest section (21-25 points). 63% of the students in the survey scored in the next highest section (16-20 points). In the third section (11-15) the percentage of students was 11%. There were no scores in the bottom section (5-10). The mean score was calculated at 18.77 points and the Median score at 18.55. The graphical presentation of the scale clearly demonstrates the respondents' views. This seems clear evidence of a positive attitude towards integrated provision for visually impaired students by individuals who have direct experience of it.
SECTION C - ATTITUDES TO INTEGRATED PROVISION

QUESTION C.4
IT IS IMPOSSIBLE FOR VISUALLY IMPAIRED INDIVIDUALS TO BE TAUGHT PROPERLY IN ORDINARY CLASSES

<table>
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<th>SIG</th>
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<td></td>
</tr>
<tr>
<td>DISAGREE</td>
<td>29</td>
<td>37%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRONGLY DISAGREE</td>
<td>31</td>
<td>39%</td>
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QUESTION C.5
THE INCREASE IN THE NUMBER OF VISUALLY IMPAIRED PEOPLE IN MAINSTREAM EDUCATION AND TRAINING IS GOOD NEWS

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>NUMBER</th>
<th>PERCENT</th>
<th>CHI-SQ</th>
<th>DF</th>
<th>SIG</th>
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<tbody>
<tr>
<td>STRONGLY AGREE</td>
<td>33</td>
<td>42%</td>
<td>74.61</td>
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<td>&lt;0.01</td>
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<tr>
<td>AGREE</td>
<td>46</td>
<td>46%</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>NEUTRAL</td>
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<td></td>
</tr>
<tr>
<td>DISAGREE</td>
<td>5</td>
<td>5%</td>
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<tr>
<td>STRONGLY DISAGREE</td>
<td>1</td>
<td>1%</td>
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SECTION C - ATTITUDE TO INTEGRATED F.E. PROVISION

WEIGHTED RESPONSES - POSITIVE TO NEGATIVE - 5 TO 1

MAXIMUM FAVOURABLE SCORE - 25, MINIMUM - 5 PER RESPONDENT

<table>
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<tr>
<td>11-15</td>
<td>9</td>
<td>11%</td>
<td>1</td>
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</tr>
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<td>5-10</td>
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<tr>
<td>71.94</td>
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SECTION C - TEST RETEST PROCEDURE

**TEST**

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<th>3</th>
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<td>6</td>
<td>4</td>
<td></td>
<td></td>
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<td></td>
</tr>
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<td>2</td>
<td></td>
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</tr>
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<td></td>
<td>2</td>
<td>5</td>
<td>3</td>
<td></td>
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**SCORE**

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<td>90</td>
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<tr>
<td>11-15</td>
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<td>0</td>
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**RETEST**

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<td>3</td>
<td>6</td>
<td></td>
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**SCORE**

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<td>16-20</td>
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<tr>
<td>11-15</td>
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<td>5-10</td>
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249
QUESTION C.1
IN MAINSTREAM FURTHER EDUCATION COLLEGES

QUESTION C.2
IN SPECIAL FURTHER EDUCATION COLLEGES
QUESTION C.3
IF THEY'VE BEEN TAUGHT WITH SIGHTED STUDENTS

QUESTION C.4
IT IS IMPOSSIBLE IN ORDINARY CLASSES
QUESTION C.5
INCREASE IN MAINSTREAM EDUCATION AND TRAINING IS GOOD NEWS

SECTION C - ATTITUDE TO INTEGRATED F.E.
MAXIMUM FAVOURABLE SCORE - 25, MINIMUM - 5 PER RESPONDENT
26. Conclusions

26.1 Restatement of Purpose.

The underlying thread throughout this thesis is the strongly held belief that the best source of information about the needs of visually impaired students in mainstream further education is the students themselves. In the author's work as the head of a Learning Support (Visual Impairment) team, mainstream teachers were often urged to use the student (rather than the visual impairment specialist) as the principle source of the information they need in order to deliver the teaching programme to their students.

As stated at the start of this section this research study was designed to identify and examine the services that relate to the successful integration of visually impaired students in mainstream further education and to evaluate these services to establish their relative value in this mainstreaming process from the perspective of visually impaired students. In other words, 'the best source of information is the students themselves. The author felt strongly that their perspective was certainly relevant and had not been given due weight to-date.

The study was designed in order to ascertain the collective view of visually impaired students on three main points. The primary objective of the survey was to establish their evaluation of the range of services concerned with the effective support and integration of visually impaired students in mainstream further education. It was also intended to discover the extent to which the students' own experience of support provision demonstrated the level of provision and their degree of satisfaction with it. Thirdly, there was the intention to gauge their views on the
value of mainstream provision for visually impaired students.

26.2 Ranked Factors for Effective Integration.

This survey demonstrates that there are clear similarities in the views of students and professionals on what makes for effective integration support for visually impaired students in further education. As recorded initially in Section 24 the services that the visually impaired students in this survey evaluated in rank order are:

1. Special Equipment;
2. Suitable Print/Braille Materials;
3. INSET;
4. Financial Guidance;
5. Mobility Services;
6. Visual Impairment Specialists;
7. Ancillaries;
7. Reader Services;
9. Tape Services;
10. RNIB Student Officers.

As mentioned before there is a danger that ranking the results could be to some degree misleading as it may imply distinctions greater than in fact exist and this should be borne in mind. It is still valuable to look at these results with a view to gauging the relative importance of different factors. This information would be of value to anyone planning to set up a support structure for visually impaired individuals. There is also a need when difficult resourcing decisions have to be made to ensure that the maximum advantage is obtained from the services that are funded. Good quality information is essential in this procedure. In view of this it seems particularly
valuable to look at the student evaluation of services as the end-user is obviously very well placed to make such an evaluation. It is also very important to look at the student perspective in relation to other surveys which have examined the same or closely related areas.

26.3 Relating Data to Other Surveys

The recent collaborative RNIB, NIACE and SKILL survey (1992) looked at colleges (both further and higher education) and LEAs to establish the nature of provision for visually impaired students. This survey did not include students in its design. It produced a list of support services but did not provide any ranking by priority order. The survey by Patten (1988) was specifically looking at further education colleges. There is an attempt to include a student perspective but this is not part of the central study and is added as an appendix with little statistical validity. It does provide a ranked listing of support services. Bishop's study (1986) was based on experiences of the American education system and primarily concerned with schools. There was a minority (15%) student input. This study also provided a ranked list of factors. In the same year (1986) a study by Buultjens in this country on schools provides a ranked list of factors for the effective education of visually impaired pupils. This survey did not attempt to include a direct input from visually impaired pupils.

To date it seems that the Patten study (1988) is most closely comparable to this study of visually impaired students. Comparisons with the other surveys mentioned above is obviously also of interest. Comparing the ranked list above with the results of the research by Patten is very interesting. It is fair to say that Patten's study was intended to establish the views of college staff rather than
that of students. The main conclusion of that survey was as follows. "It is clear ... that the main areas in which colleges would like to have assistance are staff training and development and information about the special study equipment possibly including the chance to try out the latter". (Patten, 1988). The survey goes on to list the colleges' preferences for support services in rank order. The list was detailed earlier in Section 19 but it seems appropriate to produce it again. There are clearly some points of agreement and disagreement between the Patten study and the current one. On balance, there seems to be more of the former than the latter. The support the colleges wanted was: -

"1. staff training;
2. equipment;
3. finance planning;
4. planning courses;
5. examination arrangements;
6. counselling;
7. mobility." (ibid., p.31).

It seems appropriate to look at the ranked list obtained by the current survey and see to what extent there is a convergence or divergence of view between the client group, the visually impaired students, and professionals. In the student survey the availability of special equipment was at the top of the list. This same item was highly regarded by the professionals who responded to the Patten survey (1988) who placed it in second place in the rank order of services. The joint RNIB, NIACE, and SKILL survey also listed "special equipment" in the table of, "special arrangements made for visually impaired students". (RNIB,1992). This survey, as mentioned above, did not rank these services. It is interesting to note this close agreement between the providers and clients on the importance of this area of
support. Special equipment tends to be an expensive item, especially when looked at in terms of cost per student rather than in terms of overall budgets. Nonetheless, it is clear that both students and professionals in the field perceive it as a very important factor for successful mainstream experience for visually impaired students.

It is valuable to link this data to the finding in the first section of the questionnaire which asked the students to list the special equipment they felt would benefit them. This demonstrated that the students had a good appreciation of the range and capabilities of special equipment. The author suspects that their knowledge of this area is much better developed than that of the general special needs staff in further education colleges. This is another reason for giving full consideration to the views of visually impaired students on this matter.

In this survey of student opinion the production of work materials in appropriate Braille or Large print formats was rated in second place in the ranked list of services. The collaborative RNIB/NIACE/SKILL study listed "adaptations of materials" (RNIB, 1992) in its unranked list and the study by Buultjens (1986) also placed it second in priority order. The Patten survey (1988) did not have a separate item on transcription of materials but did have a more general item on course planning which would cover the production of materials. This item was ranked fourth in Patten's table. This is one of those areas which is fundamental to the effective study of most courses by visually impaired individuals and as such can be overlooked because it is taken as read. It can also be an area where the need is not fully understood.

Clearly when asked directly about it the students have strongly underlined the vital role it plays. This is not
always fully understood by college lecturers and college reprographic departments. In the author's experience there is no difficulty with mainstream teachers where the need is for Braille. On the other hand, where a suitable print format is required there can be problems in comprehending this on the part of the teacher. Once you have moved beyond the idea of simple photo-copier enlarging some mainstream lecturers find it difficult to appreciate the fact that the student's alternative print needs are just as vital as the Braille user's requirements. The importance of quality print, contrast, font type and size and, sometimes, varying colour papers are not always readily accepted. As most of the respondents in the current survey are print users it is important to note their very strong emphasis on the value of appropriate print production.

In-service training for teachers was third in the priority order established by the current survey. This was at the top of Patten's ranked list and was also in second position in Bishop's table of effective factors. It was also in the RNIB/NIACE/SKILL unranked list of important support services. This factor has often been linked with the question of attitudes and the role these play in effective integration. It is of considerable interest that this is seen to be so important from both sides of the educational experience. It seems that students are as convinced of the value of positive staff attitudes and appropriate training and awareness raising, as are the staff it is directed towards. In some ways INSET is rather different from most of the other services that have been identified as of value. The majority of these other services relate directly to the student and can be seen in terms of immediate support. The value of in-service training is much more an indirect input into effective integration for visually impaired individuals. For this reason it is all the more impressive that its value should be so highly regarded by the students.
It is certainly an area where the views of professionals and clients coincide to a marked degree.

The students placed financial guidance fourth in the ranked order of effective support services. This was very close to the third place this item received in Patten's survey (1988). Again, this was a listed support service in the RNIB/NIACE/SKILL survey (1992). This seems to be another area where the views of visually impaired students and professionals coincide closely. It is likely that anyone who is connected to the area of further education and special needs will quickly discover the complexity of funding arrangements that are to be found in this area. This complexity has been described in detail in Section 18. This is one of those services that has a fundamental importance in that unless the student can find a way through the financial maze satisfactorily then the student is unlikely to even begin the course. The support structure will fail at this preliminary stage if this area is overlooked. It is clear that the respondents in the current survey fully appreciated this point and it is clear from other surveys that this appreciation is shared by teachers and administrators, too.

Mobility support was the next highest ranked factor in the current study. It was placed in fifth position which is very close to the seventh place that it was given in Patten's survey (1988). The 1992 RNIB/NIACE/SKILL study listed mobility as a support service for visually impaired students in further education but did not give any ranking for it. It was interesting to see another close coincidence of views between the student survey and that of the college professionals conducted by Patten. Mobility support seems to fall into the same category of fundamental importance that was mentioned when considering financial guidance. If
a student cannot obtain mobility assistance in the learning of new routes to and about a college campus where this is necessary, it is unlikely that the student will attend any course. The data from the current survey and that from others indicates that this point is well taken by individuals on all sides concerned with the education of visually impaired people in mainstream further education.

Visual impairment specialists did not come out of the current study very highly placed. It seems important to restate the point that all the services listed in the instrument could be seen as intrinsically useful and all attracted positive evaluation and that the ranking procedure can artificially inflate differences between factors. As a visual impairment specialist the author would be expected to make such observations. There is also the point that the work of such specialists is very largely unseen by the students involved. The support is primarily indirect as far as the student is concerned. It is mainly geared towards the college lecturer and in setting up appropriate support services such as ancillary and reprographic systems. Much of this will be unnoticed and indeed should be unnoticed by the student. All support schemes should be designed to encourage independence in students so that they can initiate their own support wherever they might be working. A low ranking for specialists could indicate success in this independence building. On the other hand, it might well indicate that visually impaired students in mainstream further education place rather less value on the contribution of specialists than the specialists themselves.

In the Bishop survey (1986) visual impairment specialists were placed in fifth position in rank order and Buultjens (1986) put them in sixth place. These placings are quite close to the sixth position this item achieved in the current study. The 1992 RNIB/NIACE/SKILL survey also listed
"specialist support" in the unranked catalogue of "special arrangements made for visually impaired students". (RNIB,1992). In many ways the position of the RNIB Student Advisory Officers can be grouped in with that of the visual impairment specialists. In this study of visual impaired individuals in mainstream further education the respondents placed these RNIB Officers in tenth position. The work of these professionals is very often geared indirectly towards students in the same way as has been described above for the specialists. Additionally, there have been recent changes in this RNIB service. Traditionally the Advisory Officers have been associated with the higher education sector. In recent years there has been an attempt to increase their services much more in the further education area. The results of this current survey seems to suggest that there is some work yet to be done before these professional officers receive the recognition in the further education sphere comparable to their standing in higher education.

Next in the ranked list of factors for effective mainstream integration of visually impaired students was ancillaries. These non-teaching assistants were quite widely valued by the students in the study. Interestingly, ancillaries do not get much recognition in other surveys. Although "non-teacher practical support" (RNIB,1992) is listed in the RNIB/NIACE/SKILL study as a support service there is no mention in any of the other studies of personnel of this type. This does seem an oversight as in the author's experience ancillaries play a crucial role in the support of many visually impaired students. In some ways ancillaries have a more direct influence on student success than specialist and coordinators who usually have far less direct involvement with a student. By evaluating the importance of these support assistants in seventh place out of ten the visually impaired students in the study have made clear that they view this role as one of some importance. It is
interesting to note that the students in the study certainly valued the work of ancillaries close to that of visual impairment specialists. It is noticeable that some of the factors scoring the lower totals are the ones where one would expect the specialist expertise to be highest. For example, as mentioned above the RNIB Student Officers come last in the list. It seems that in this area of ancillary assistance that the value of client opinion is particularly important. To some extent there is a conflict of interest in asking professionals and specialists to evaluate their own worth and it likely that the recipients of support services are in a better position to make an evaluation where this is the case.

In seventh and ninth place in the ranked list of effective support services for successful integration were Personal Reader Services and Audio Tape facilities. It seems sensible to take these two together given the similarities of content and their close positions in the rank order. Despite their low placings it is, again, worth noting that these items still received substantially positive evaluations by the respondents. Neither service has been mentioned by other surveys. There may be a tendency to overlook their potential because of the danger of over-simplistic and stereotypical reactions to visual impairment. It is not just Braille using visually impaired students who can benefit greatly from such provision. Many visually impaired individuals who use print do so slowly and with considerable levels of fatigue. These services can transform their reading speeds and increase the duration and effectiveness of study sessions.

This analysis of effective support services has an important value in the development of provision for visually impaired students in mainstream further education. It seems clear that there is an increasing demand from visually impaired
individuals for access to the wider further education curriculum and social integration of the mainstream college. Establishing a support structure for such students at one college has been the author's professional responsibility over the last four years. In that time links have been established with many other colleges where similar developments (but generally on a smaller scale) are taking place. It seems that recent legislation on further education makes it more likely that mainstream rather than discrete provision will be encouraged. This is likely to add further pressure to the existing demands for greater access and greater provision of necessary support services for visually impaired students. In the light of this the views of visually impaired students on the range of support services seem to be an important contribution to the discussion on what makes for effective mainstream provision.
The primary aim of the survey was to obtain an evaluation of the areas of effective support for visually impaired students outlined above. At the same time the survey provided an opportunity to make some assessment of the levels of satisfaction with support services currently being provided for visually impaired students and their view of the value of integrated provision. These secondary aims should reflect on the issues raised in the first part of this thesis. It is clear that the experiences of visually impaired students in further education with regards to the levels of available support throw light on the main issues discussed in the integration debate in general. These seem to focus on the areas of the feasibility of support schemes in the mainstream and the willingness of mainstream providers to fund the necessary arrangements.

Data analysis of Section A, sub-titled, "About You", was intended to establish the levels of satisfaction felt by students for the support services they were receiving. This information would be of interest in the light of questions raised by many as to the effectiveness of support arrangements in the mainstream. After the initial biographical questions and ones relating to special equipment and personnel, there were two items designed to discover levels of student satisfaction. These items related to key areas of the provision of special equipment necessary for effective study and the transcription of work material. The item on equipment sought to gauge the extent to which the students were able to obtain the equipment they needed. It is worth briefly restating the main results of this item. 38% of respondents were positive in their response to the proposition that they had no difficulty obtaining necessary special equipment. Another 32% were neutral. In the negative response area were 29% of the
students. While the tendency shown by these figures is towards an overall Neutral/Agree position, it still indicates that quite a large percentage had difficulties. Closer analysis of this data shows that the Braillists had a higher level of concern than the Print using students. While only 5% of the Print users selected the most negative response, as many as 36% of the Braillists expressed strong disagreement with the statement.

The second key item in this section related to obtaining work materials in the appropriate media. The statement deliberately used the phrase "few difficulties" rather than "no difficulties" in relation to the provision of the transcription service. As mentioned earlier in this thesis, even the best reprographic system for visually impaired students is likely to suffer from some problems of late completion. Once again it seems worthwhile to restate the results for the item. 53% of the respondents were in the positive response area that they had few difficulties obtaining adapted materials. There were 27% in the neutral and 19% in the negative area.

Again, when looking more closely at this information, the Print users were more satisfied with these arrangements than were the Braillists. 59% of Print users and only 36% of Braillists recorded positive responses. In the negative area this pattern was to some extent repeated with 16% of the Print using students and 36% of the Braille users registering at this end of the scale. This item seems similar to the responses to the previous item on equipment and indicates that the students using Print as their medium are rather more satisfied than the others. There seems some cause for concern here in that a pattern seems to be emerging of a general lower level of satisfaction among Braillists. This finding needs to be put into the general
context of the overall tendency to positive levels of satisfaction indicated by the students.

The last section of the questionnaire was entitled, "Special Education and Mainstream Education - Your Views" and was an attempt to determine the overall views of the respondents towards integrated provision. In answer to the proposition that visually impaired people are better off in mainstream further education there was a slightly more negative reaction from students using tactile forms. Whereas 46% of the Print users selected a positive option, 36% of the non-print users did so. The same pattern was again observable at the other end of the scale. 22% of the Print users registered negative reactions as against 36% by the Braille users. The greater reservation about mainstream provision by Braille users was again evident in the responses to the statement about separate specialist colleges. There was a stronger positive result recorded by Braille users in favour of segregated provision. The figures were 36% of Braille users were positive towards the idea of special and separate further education as opposed to 19% of the Print users.

In response to the proposition that visually impaired people are better able to take part in society if they have been taught with sighted students, it was interesting to note that Braille users were slightly more positive in their response than Print users (Braille users - 91%, Print users - 85%). This reversal of the situation of the previous two items was continued with the proposition about the impossibility of visually impaired students working effectively in ordinary classes. This was interesting because Braille users might be considered to have the most difficulties in the ordinary class. The figures were Braille users - 91%, Print users - 73%. There was little
variation discernible in the responses of the Braillists and Print users on the last statement in Section C.

This examination of the responses in the first and last section of the instrument to see what light they throw on the question of the level of student satisfaction with the provision of support services does indicate a pattern of some consistency. Visually impaired students in this survey score very highly positive rates on items of a theoretic nature about the value of mainstream provision. The items with a harder edge to them which ask about the level of provision that they experience reveal a much less positive picture, but one which is still, nevertheless, positive. The picture that emerges also tends to show that the Braillists are less satisfied with the provision of support services than the students who use Print as their preferred medium. It is clear that there is some way to go before visually impaired individuals feel more fully confident about the level of support services they are receiving even if, in principle, they are convinced that mainstreaming can work and is for many the better option.

26.5 The Value of Mainstreaming.

The last section in the instrument set out to gauge the attitudes of the respondents towards mainstream provision for visually impaired students in further education. It did this by using a Likert type scale in which the items, while having the necessary continuity of theme, also looked at some of the key areas of the integration debate. It is perhaps worth restating here the point discussed earlier in this thesis (Section 11) that the growth in the numbers of such students is a fairly recent development over the last decade and that the traditional providers in this field were separate institutions normally maintained by voluntary
societies. It is also important to note that the separate specialist school remains part of the standard educational career of many visually impaired people, especially those with greater degrees of visual loss. It is against this background that the students' views should be considered.

The last section of the instrument contained five items. The first two were an attempt to force respondents to make hard, and to some extent, simplistic decisions about the best form of provision for visually impaired individuals in further education. Basically, they were asked to decide for or against mainstream provision. This was an artificial proposition as I would think most people, the author included, would advocate the advantages of a continuum of provision. This was deliberate, however, in an attempt to force the issue and produce a clearer picture. One respondent reacted to this by writing comments on the questionnaire even though such observations were not invited. Below the item advocating mainstream provision was the comment, "if the person can cope", and on the item on separate provision was noted, "it is their own choice". The author fully agrees with these comments.

The first two items produced large Neutral responses. 34% of the respondents indicated a Neutral position on the first item and 46% on the second. For both items the Neutral response was the best supported single option. This gives a clear indication of the lack of dogmatism evident among the students in the survey. There was a 43% positive response (combining the two positive options) and a 23% negative response to the item advocating mainstreaming. For the item about segregated provision the responses tended to be towards a negative view (33%) as against the positive (20%).

These figures seem to indicate that the students in the study resist simplistic positions on the
mainstream/segregation debate. It is certainly likely that many of them will have experienced both areas of provision and can see the balance of advantage and disadvantage. The balance will swing one way or the other dependent on particular circumstances. The strength of support for the middle ground option for these two items demonstrates, to my mind, a sophisticated appreciation of this point. Where respondents have moved away from the middle ground there is a preference expressed for the mainstream option.

The last three items were far less hard-edged. They were concerned much more at a theoretical level and did not ask for categorical statements about one approach being the best for all visually impaired students. The items attempted to look at key areas. These were about social integration and the best way to achieve it; about the feasibility of education in ordinary classes for students with severe difficulties - in this case registered visual impairment; and about their reaction to the increase in numbers of visually impaired students in mainstream further education.

The third item asked whether visually impaired people were better able to take a full part in society if they had been taught with sighted students. This tackled a common area of the integration debate about how best to ensure full social integration for visually impaired people. Basically the question is about whether it is better to educate such individuals separately with a special curriculum and later have reintegration into society or whether the best course is to educate visually impaired students with their sighted peers. The response to this item was very positive. The large majority (84%) indicated a positive reaction to the statement. The strength of this reaction leaves little room to doubt that the respondents on this survey were convinced of the value of mainstream provision in terms of social integration. The student view on this point is a very
powerful statement by the very individuals who are in the best position to make comment upon it. On an issue like this the collective view of visually impaired students themselves should carry a great deal of weight.

The fourth question was about whether it was impossible for visually impaired individuals to be taught properly in ordinary classes. This lay at the very heart of the objections of those who would argue that the mainstream environment can not provide the necessary level of support to enable individuals who are registered blind or partially sighted to succeed. The response to this item was strongly negative. The large majority (76%) of respondents indicated a negative response to the statement. This seems another powerful statement about the feasibility of mainstream provision from individuals who were directly experiencing it. It is important to make a distinction here to clarify this point. These students are not giving this high level of approval to the support services they themselves are currently receiving. Indeed, from their responses from the first section of the instrument this is clearly not the case. What is being demonstrated is a conviction that the mainstream environment can be made to work for visually impaired students provided there is the right level of resourcing and the right mix of support services.

The last item was much more generalised than the previous two and sought to gauge the respondents reaction to the growth in visually impaired student numbers in mainstream further education. It was an attempt to get an overall judgment from the survey population. The integration debate is a complex one which often calls for fine, detailed judgments often depending on the circumstances of individual cases. The author sought to get away from this complexity and obtain the overall balanced view on whether "more was better". "More" being more visually impaired students in
mainstream settings. The very large majority of respondents in the survey (88%) felt that this increase was good news. Again, this was a powerful generalised statement by the individuals best placed to make it.

The Likert-type scale for this section attempted to gauge the degree of respondents' positive or negative attitude on integrated provision for visually impaired individuals in further education. The scale went from 5 to 25 points. It seems appropriate to restate the results. 25% of the survey population scored in the highest group (21-25 points); 63% of in the next highest group (16-20 points); and in the third group (11-15) the percentage of students was 11%. There were no scores in the last group (5-10 points). The survey population were, in my opinion, best placed to make an observation based on an understanding of the issues involved and with direct relevant experience of the advantages and disadvantages of the particular form of provision. Clearly these students had chosen the mainstream option in the first instance and one might expect them to hold a pro-integration position. However, the survey was conducted after nearly three academic terms of actual service delivery in the mainstream. This would certainly be long enough to reveal any inadequacies and inabilities of the mainstream system to deliver their courses effectively. With this in mind, this Likert type scale results seem clear evidence of a positive attitude towards integrated provision for visually impaired students by individuals who have directly experienced it.

Their responses overall indicate a balanced and thoughtful judgment which does not seek to minimise difficulties or over-emphasise advantages. This is as true for the last section of the survey as it is for the earlier ones and as such makes an important contribution to the discussion on mainstream further education provision for visually impaired
individuals. This contribution is of particular value as it is from the perspective of the visually impaired students, themselves.
26.6 Implications of the Survey.

A number of findings emerge from this survey.

1. It is clear that mainstream further education provision for visually impaired students can work.

2. In order to do so effectively it needs properly established support services.

3. It is apparent that these services are not always established to the level that visually impaired student would wish to see in colleges.

4. Nonetheless, visually impaired students in further education are positive about its benefits and about the prospect of increasing mainstream provision for visually impaired people in the future.

The data in this survey demonstrates that mainstream provision can be effective, despite the fact that this has been called into doubt by some critics, particularly in the case of visually impaired students who use Braille as their preferred medium. While there is evidence in the survey that Braille users are less satisfied than print using students it is none the less the case that attitudes of the majority of both Braillists and non-Braillists were positive towards mainstream provision. Of course this is very much tied up with the question of the availability of appropriate resources and effective support services. Without such services it would certainly be impossible for many visually impaired students to function in mainstream colleges.
2. In order to do so effectively it needs properly established support services.

This concern with what are the appropriate support services for visually impaired college students was at the centre of the research study. With new legislation in the form of the Further and Higher Education Act (1992) confirming official recognition of students with special needs in the further education sector and also extending the age limits from 19 to 25 years for such students, it is likely that information about appropriate support services will be useful for planning for greater numbers of visually impaired people in mainstream F.E.. This data will also be of direct interest to current practitioners. Monitoring and evaluating existing support services in colleges is a continuing process. This is certainly true for the author. The student perspective can now be included in this process to a much greater degree than was possible before. It is not just a case of identifying the appropriate services but also of ensuring the right balance of such services. By combining the professional view and the student perspective this balance of services is more likely to be effective in ensuring that visually impaired individuals achieve their full potential in F.E. colleges.

What emerges is to some degree a convergence of view between professionals in the field of visual impairment and visually impaired students. One example that illustrates this convergence is that of the special equipment. Its value is recognised by all. This important element of support also demonstrates the gap between what would be of value to students and what is currently available to them. The equipment clearly helps to gain access to mainstream courses. It can also assist significantly in addressing some of the disadvantages of visual impairment such as the extra time that is often needed to complete tasks. There
is, incidentally, an interesting symmetry here in the development of services for visually impaired people over the last hundred years. In the nineteenth century it was the development of Braille as a communication medium that necessitated special provision and took visually impaired people out of the mainstream. In the last quarter of the twentieth century the development of digital technology has equipped Braille users to return to mainstream provision. They can share electronic communication media with sighted peers and, using these new computer systems, work effectively with teachers who have no knowledge of Braille.

3. It is apparent that these services are not always established to the level that visually impaired student would wish to see in colleges.

This area of special equipment also illustrates the concern that was to some degree evident in the survey that visually impaired students in mainstream further education are not always in receipt of the most effective support services. Responses to the survey indicated that students fully appreciated the value of this equipment. However, they were less positive in their responses to the item which sought to gauge their level of satisfaction with the actual provision of such equipment. As stated earlier it is likely that given the rapidly changing nature of this technology and the high per capita costs involved, there is always likely to be some degree of dissatisfaction. On the other hand, it is a useful reminder of the widespread view that integration should not be seen as a cheap option. A significant cost for effective support schemes would be the expense of appropriate technology.
4. Nonetheless, visually impaired students in further education are positive about its benefits and about the prospect of increasing mainstream provision for visually impaired people in the future.

Despite some reservations about the levels of support services currently available there is no doubt that the visually impaired students in the survey valued mainstream provision. This certainly would not be the case if mainstream further education was failing this group. It is clearly succeeding in the further education sector as it has in other areas of educational provision and, for the author, this is the most important finding that emerges from the survey. It seems appropriate to end by restating the observation of a visually impaired individual quoted in the NFER report as long ago as 1977. "What we have in common with the sighted is much more extensive than what distinguishes us". (Jamieson, et al., 1977, p.106). This is certainly borne out by this research study.
Appendix 1. Midlands Colleges with Visually Impaired Students

1a. Colleges with visually impaired students (discrete and mainstream).

1b. Colleges with visually impaired students on mainstream courses.
la. Colleges with Visual Impaired Students (Discrete and Mainstream).

45 colleges were identified with visually impaired students in attendance.

BARNFIELD COLLEGE
LUTON, LU3 2AX
GILL COLLINGE
HEAD OF HUMANITIES

DUNSTABLE COLLEGE
DUNSTABLE, LU5 4HG
NORA ASSINGER
SPECIAL NEEDS COORDINATOR

BOURNEVILLE COLLEGE OF FE
SOUTH NORTHFIELD
BIRMINGHAM, B31 2AJ
CARRIE MACHATTIE
SPECIAL NEEDS COORDINATOR

HALL GREEN COLLEGE
HALL GREEN
BIRMINGHAM, B28 8ES
ROGER WATKINS
SPECIAL NEEDS COORDINATOR

HANDSWORTH TECHNICAL COLLEGE
SOHO ROAD
BIRMINGHAM, B21 9DP
SUE DALEY
SPECIAL NEEDS DEPT
MATTHEW BOLTON COLLEGE
BIRMINGHAM, B5 7DB
LYNN MASON
SPECIAL NEEDS DEPT

SUTTON COLDFIELD COLLEGE OF FE
BIRMINGHAM, B74 2NN
GWENN TURNER
LEARNING SUPPORT DEPT

MACCLESFIELD COLLEGE OF FE
MACCLESFIELD, K11 8LF
HILARY MCKAY
SPECIAL NEEDS DEPT

SOUTH CHESHIRE COLLEGE
CREWE, CW2 2AB
STEVE BRISCOE
SPECIAL NEEDS COORDINATOR

CHESTERFIELD COLLEGE OF TECH AND ARTS
CHESTERFIELD, S41 7NG
DOREEN TWYFORD
SPECIAL NEEDS DEPT

DERBY TERTIARY COLLEGE
WILMORTON, DERBY DE2 8UG
CATHY CORNS
SPECIAL NEEDS DEPT

HIGH PEAK COLLEGE OF FE
BUXTON
DERBYSHIRE
JANE SMEDLEY
SPECIAL NEEDS DEPT
<table>
<thead>
<tr>
<th>College</th>
<th>Address</th>
<th>Contact Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOUTH EAST DERBYS COLLEGE</td>
<td>ILKESTON, DERBYS, DE7 5RS</td>
<td>JUDITH JONES</td>
<td>SPEC NEEDS COORDINATOR</td>
</tr>
<tr>
<td>CIRENCESTER COLLEGE</td>
<td>STRoud ROAD, CIRENCESTER, GL5 1XB</td>
<td>IAN HARTNELL</td>
<td>SPECIAL NEEDS COORDINATOR</td>
</tr>
<tr>
<td>STROUD COLLEGE OF FE</td>
<td>STRoud, GL5 4AH</td>
<td>MRS CRITCHLEY/JOHN MILLIGAN</td>
<td>SPECIAL NEEDS DEPT/RNIB STUDENTS</td>
</tr>
<tr>
<td>ROYAL FOREST OF DEAN COLLEGE</td>
<td>BERRY HILL, COLEFORD, GL16 7JT</td>
<td>SUZANNE ANGEL</td>
<td>SPECIAL NEEDS COORDINATOR</td>
</tr>
<tr>
<td>HEREFORD TECHNICAL COLLEGE</td>
<td>HEREFORD, HR1 1LT</td>
<td>SUSAN WHITEHEAD</td>
<td>SPECIAL NEEDS COORDINATOR</td>
</tr>
<tr>
<td>CHARLES KEENE COLLEGE OF FE</td>
<td>LEICESTER, LEICS</td>
<td>SUE WILKINSON</td>
<td>SPECIAL NEEDS COORDINATOR</td>
</tr>
</tbody>
</table>
COALVILLE TECHNICAL COLLEGE
COALVILLE
LEICS, LE67 3PW
SUE HUGHS
SPECIAL NEEDS COORDINATOR

LOUGHBOROUGH TECHNICAL COLLEGE
LOUGHBOROUGH, LEICS
NEIL TODD
SEN LEC LEARNING SUPPORT

MELTON MOWBRAY COLLEGE OF FE
MELTON MOWBRAY
LEICS, LE13 0HJ
ANN TRANGMAR/WENDY CRONIN
SPECIAL NEEDS COORDINATOR

SOUTH FIELDS COLLEGE OF FE
LEICESTER, LEICS
DAVE JACKSON
SPECIAL NEEDS COORDINATOR

WIGSTON COLLEGE OF FE
WIGSTON
LEICESTER
JOHN FLETCHER
SPECIAL NEEDS COORDINATOR

NORTH LINCOLNSHIRE COLLEGE
RIVERHEAD ROAD
LOUTH, LN11 7AH
BARBARA PLUNKETT
SPECIAL NEEDS COORDINATOR
NORFOLK COLLEGE OF ARTS AND TECHNOLOGY
KINGS LYNN, PE30 2QW
BETTY DOCKNEY
SPECIAL NEEDS COORDINATOR

NORWICH CITY COLLEGE OF F AND HE
NORWICH, NR2 2LJ
RICK BRANHAM
SPECIAL NEEDS COORDINATOR

NORTHAMPTON COLLEGE
NORTHAMPTON, NN3 3RF
BILL JENNINGS/PAT MAJOR
SPECIAL NEEDS DEPT

OXFORD COLLEGE OF FE
OXFORD, OX1 1SA
MIKE ROLF
SPECIAL NEEDS TEACHER

THE HENLEY COLLEGE
HENLEY ON THAMES, RG9 1UH
ANN LAMONT
SPECIAL NEEDS COORDINATOR

NORTH SHROPSHIRE COLLEGE
SHROPSHIRE
STEVE SMITH
SPECIAL NEEDS COORDINATOR

SHREWSBURY COLLEGE OF ARTS & TECHNOLOGY
SHREWSBURY
SHROPSHIRE
MRS MALIK-CANN
SPECIAL NEEDS COORDINATOR
CANNOCK CHASE TECHNICAL COLLEGE
CANNOCK CHASE
STAFFORDSHIRE
DIANNE DUDLEY
SPECIAL NEEDS COORDINATOR

LEEK COLLEGE OF FE
LEEK, ST13 6DP
VAL SMITH
SPECIAL NEEDS COORDINATOR

NEWCASTLE UNDER LYME COLLEGE
NEWCASTLE UNDER LYME
STAFFS
SYLVIA ELLIS
SPECIAL EDUCATION DEPT

TILE HILL COLLEGE OF FURTHER EDUCATION
COVENTRY, CV4 9DX
LIZ VARNISH
LEARNING SUPPORT

DUDLEY COLLEGE OF TECHNOLOGY
DUDLEY, DY1 4AS
STEVE ROPER
SPECIAL NEEDS COORDINATOR

STOURBRIDGE COLLEGE OF TECH & ART
STOURBRIDGE
W.MIDS
VIVIANNE PUGH
SPECIAL NEEDS COORDINATOR
SANDWELL COLLEGE OF F & HE
SMETHWICK
W.MIDS, B66 3BU
JULIE DAVIS
STUDENT FACILITATOR

WALSALL COLLEGE OF TECHNOLOGY
WALSALL, WS1
JONATHAN WALPOLE
VI SUPPORT

BILSTON COMMUNITY COLLEGE
BILSTON
WOLVERHAMPTON, 4WW 6ER
ALAN ROBERTS
SPECIAL NEEDS COORDINATOR

EAST WARWICKSHIRE COLLEGE OF FE
RUGBY
WARWICKSHIRE, CV21 3QS
LIZ COLLINS
SPECIAL NEEDS CO-ORDINATOR

MID-WARWICKSHIRE COLLEGE OF FE
WARWICKSHIRE
KIM FORD
SPECIAL NEEDS COORDINATOR

NORTH WARWICKSHIRE COLLEGE OF TECH & ART
NUNEATON
WARWICKSHIRE, CV11 6BH
BRIAN SIMPSON
SEN LEC SPECIAL NEEDS
SOUTH WARWICKSHIRE COLLEGE OF FE
ALCESTER ROAD
STRATFORD
RACHEL WOOD
SPRINGBOARD ORGANISER

WORCESTER COLLEGE OF TECHNOLOGY
WORCS, WR1 2JF
CHRIS WILKINS
SPECIAL NEEDS COORDINATOR
1b. Colleges with Visually Impaired Students on Mainstream Courses.

31 colleges were identified with visually impaired students in attendance on mainstream courses.

DUNSTABLE COLLEGE
DUNSTABLE
LU5 4HG
NORA ASSINGER
SPECIAL NEEDS COORDINATOR

BOURNEVILLE COLLEGE OF FE
SOUTH NORTHFIELD
BIRMINGHAM, B31 2AJ
CARRIE MACHATTIE
SPECIAL NEEDS COORDINATOR

HALL GREEN COLLEGE
HALL GREEN
BIRMINGHAM, B28 8ES
ROGER WATKINS
SPECIAL NEEDS COORDINATOR

SUTTON COLDFIELD COLLEGE OF FE
BIRMINGHAM, B74 2NN
GWENN TURNER
LEARNING SUPPORT

MACCLESFIELD COLLEGE OF FE
MACCLESFIELD, SK11 8LF
HILARY MCKAY
SPECIAL NEEDS DEPT
SOUTH CHESHIRE COLLEGE
CREWE, CW2 2AB
STEVE BRISCOE
SPECIAL NEEDS COORDINATOR

CHESTERFIELD COLLEGE OF TECH AND ARTS
CHESTERFIELD, S41 7NG
DOREEN TWYFORD
SPECIAL NEEDS DEPT

DERBY TERTIARY COLLEGE
WILMORTON, DERBY DE2 8UG
CATHY CORNS
SPECIAL NEEDS DEPT

SOUTH EAST DERBYS COLLEGE
ILKESTON, DERBYS DE7 5RS
JUDITH JONES
SPECIAL NEEDS COORDINATOR

CIRENCESTER COLLEGE
STROUD ROAD
CIRENCESTER, GL5 1XB
IAN HARTNELL
SPECIAL NEEDS COORDINATOR

STROUD COLLEGE OF FE
STROUD, GL5 4AH
MRS CRITCHLEY/JOHN MILLIGAN
SPECIAL NEEDS DEPT/RNIB SUPPORT

ROYAL FOREST OF DEAN COLLEGE
BERRY HILL
COLEFORD, GL16 7JT
SUZANNE ANGEL
SPECIAL NEEDS COORDINATOR
HEREFORD TECHNICAL COLLEGE
HEREFORD, HR1 1LT
SUSAN WHITEHEAD
SPECIAL NEEDS COORDINATOR

CHARLES KEENE COLLEGE OF FE
LEICESTER
LEICS
SUE WILKINSON
SPECIAL NEEDS COORDINATOR

COALVILLE TECHNICAL COLLEGE
COALVILLE
LEICS, LE67 3PW
SUE HUGHS
SPECIAL NEEDS COORDINATOR

LOUGHBOROUGH TECHNICAL COLLEGE
LOUGHBOROUGH
LEICS
NEIL TODD
SEN LEC LEARNING SUPPORT

MELTON MOWBRAY COLLEGE OF FE
MELTON MOWBRAY
LEICS, LE13 0HJ
ANN TRANGMAR/WENDY CRONIN
SPECIAL NEEDS DEPT

SOUTH FIELDS COLLEGE OF FE
LEICESTER
LEICS
DAVE JACKSON
SPECIAL NEEDS COORDINATOR
NORTH LINCOLNSHIRE COLLEGE
RIVERHEAD ROAD
LOUTH LN11 7AH
BARBARA PLUNKETT
SPECIAL NEEDS COORDINATOR

NORFOLK COLLEGE OF ARTS AND TECHNOLOGY
KINGS LYNN, PE30 2QW
BETTY DOCKNEY
SPECIAL NEEDS COORDINATOR

NORTHAMPTON COLLEGE
NORTHAMPTON, NN3 3RF
BILL JENNINGS/PAT MAJOR
SPECIAL NEEDS DEPT

OXFORD COLLEGE OF FE
OXFORD, OX1 1SA
MIKE ROLF
SPECIAL NEEDS TEACHER

NEWCASTLE UNDER LYME COLLEGE
NEWCASTLE UNDER LYME STAFFS
SYLVIA ELLIS
SPECIAL EDUCATION DEPT

TILE HILL COLLEGE OF FURTHER EDUCATION
COVENTRY, CV4 9DX
LIZ VARNISH
LEARNING SUPPORT
STOURBRIDGE COLLEGE OF TECH & ART
STOURBRIDGE
W.MIDS
VIVIANNE PUGH
SPECIAL NEEDS COORDINATOR

SANDWELL COLLEGE OF F & HE
SMETHWICK
W.MIDS, B66 3BU
JULIE DAVIS
STUDENT FACILITATOR

WALSALL COLLEGE OF TECHNOLOGY
WALSALL, WS1
JONATHAN WALPOLE
VI SUPPORT

BILSTON COMMUNITY COLLEGE
BILSTON,
WOLVERHAMPTON 4WW 6ER
ALAN ROBERTS
SPECIAL NEEDS COORDINATOR

EAST WARWICKSHIRE COLLEGE OF FE
RUGBY
WARWICKS CV21 3QS
LIZ COLLINS
SPECIAL NEEDS CO-ORDINATOR

NORTH WARWICKSHIRE COLLEGE OF TECH & ART
NUNEATON
WARWICKS, CV11 6BH
BRIAN SIMPSON
SEN LEC SPECIAL NEEDS
Appendix 2. Letters of Inducement.

2a. David Blunkett, M.P.

2b. Deborah Cooper, SKILL.

Many writers (including Ary, 1985, Galfo, 1986) have noted that obtaining letters of inducement can have a positive effect on maximising returns. Given the reliance on a third party (college coordinators) I felt it was very important to obtain support from individuals or organisations that would carry weight with the target client group.

I decided to contact Deborah Cooper, the director of SKILL (the national organisation for students with disabilities). I outlined the research area and the important emphasis on the student perspective and asked for a letter of support which could be included with the instrument. I made a similar approach to David Blunkett, M.P. for Sheffield at the House of Commons. He was a lecturer in further education before he began his political career. I knew from his published speeches that he was strongly in favour of integrated educational provision.
Much attention has been given over the last decade to the question of integration in education at all levels. As someone who has been a long-standing supporter and practical implementor of integration, I am very keen indeed that an appraisal and monitoring of existing practice should enable us to move forward to the future with confidence.

The survey being carried out by Neil Todd is a very key step towards ensuring that this research is undertaken professionally and with competence.

I do hope, therefore, that you will feel able to participate in something which will enable many blind students, whether at school, college or in higher education, to benefit from better services and more practical and professional back-up in the future.

I recognise that the provision of adequate resources is essential if fine words are to mean anything in practice. However, getting the right sort of support and ensuring that the best use of money is achieved, has to be critical in persuading future governments to ensure that equality is carried through into reality.

I hope you will be able to assist and as someone who has had personal experience of integration both at night school and day release, together with full-time higher education - as well as being a trained teacher and having lectured in further education - I know that your time and perspective will be valued.

David Blunkett MP
Dear Student

Skill is a national voluntary organisation that tries to make sure that there are better opportunities for people with disabilities in education, training and employment.

It is very important that we know what students think about the kind of support they require in colleges and I very much hope that you will take the time to complete the questionnaire that has been sent to you.

This will not only help Neil Todd, who is undertaking the research, but it will lead to better information for organisations like ours and students like yourself in the future.

Yours sincerely

Deborah Cooper
Director
Appendix 3. The Questionnaire.

The design brief included the production of the instrument in an eighteen point Large Print font with appropriate Bold printing to ease readability.

The design brief also covered the production of a Braille copy. This ran to five pages. There was less emphasis on layout with this form of the instrument because the rules of Braille production point to the most effective use of space on the Braille page in order to lessen the number of pages required in what is a bulkier medium than print. Recording responses for a Braille questionnaire poses some problems that are not encountered in a print form. The Braille version had three different ways in which it could be completed independently by the student. Responses could be made on to cassette tape; they could be recorded separately on an extra sheet of Braille paper; or the answers could be marked onto the Braille questionnaire by indenting the paper to indicate which option had been selected or alternatively by marking with a pen. The student could also complete the questionnaire by using an amanuensis to record the responses on a print version.
Support Services for Visually Impaired Students

A) About You. Please tick the appropriate boxes.

1. Do you use - Print [ ]; Braille [ ]; or both [ ]?

2. Are you - Male [ ]; or Female [ ]?

3. Are you in the Age Group - Under 21 [ ]; 20-29 [ ]; or over 30 [ ]?

4. Are you on a full-time course? Yes [ ]; No [ ]

5. Do you get support for your course from a -
   Special Needs teacher [ ]
   Visual Impairment Specialist [ ]
   RNIB Student Officer [ ]
   Any other (please give details) [ ]

6. The equipment that would help you on your course is -
   Close Circuit Television [ ]
   Manual Brailler [ ]
   Electronic Braille Notetaker [ ]
   Portable Computer [ ]
   Portable Tape Recorder [ ]
   Reading Machine [ ]
   Low Vision Aids [ ]
   Any other (please give details) [ ]
Look at the following statements - and tick the box that best agrees with your views.

7. You have no difficulties in obtaining the special equipment that you need for your course.
   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
   [    ]       [    ]     [    ]     [    ]     [    ]     [    ]

8. You have few difficulties in obtaining materials in suitable Print or Braille for your course.
   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
   [    ]       [    ]     [    ]     [    ]     [    ]     [    ]

B) Your Views on Support Services for Visually Impaired Students in Mainstream Further Education.

1. Suitable Print or Braille materials are very important.
   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
   [    ]       [    ]     [    ]     [    ]     [    ]     [    ]

2. In-class ancillary help is very important for success.
   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
   [    ]       [    ]     [    ]     [    ]     [    ]     [    ]

3. Visual Impairment Specialists are very important.
   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
   [    ]       [    ]     [    ]     [    ]     [    ]     [    ]

4. Specialist equipment is very important for success.
   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
   [    ]       [    ]     [    ]     [    ]     [    ]     [    ]
5. The use of audio tape is very important.
Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
[  ]  [  ]  [  ]  [  ]  [  ]

6. In-service training for college teachers is very important
Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
[  ]  [  ]  [  ]  [  ]  [  ]

7. Good mobility support is very important for success.
Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
[  ]  [  ]  [  ]  [  ]  [  ]

8. Financial guidance for students is very important.
Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
[  ]  [  ]  [  ]  [  ]  [  ]

9. RNIB Student Advisory Officers are very important.
Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
[  ]  [  ]  [  ]  [  ]  [  ]

10. A Personal Reader Service is very important.
Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
[  ]  [  ]  [  ]  [  ]  [  ]

11. Are there important support services not mentioned?
Yes [  ] No [  ]. If Yes please give details -
C) Separate and Mainstream Further Education - Your Views

1. Visually impaired people get the best training and education in mainstream further education colleges.
   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
   [  ]   [  ]   [  ]   [  ]   [  ]   [  ]

2. Separate special colleges give visually impaired adults the best education and training.
   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
   [  ]   [  ]   [  ]   [  ]   [  ]   [  ]

3. Visually impaired people are better able to take a full part in society if they’ve been taught with sighted students.
   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
   [  ]   [  ]   [  ]   [  ]   [  ]   [  ]

4. It is impossible for visually impaired individuals to be taught properly in ordinary classes.
   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
   [  ]   [  ]   [  ]   [  ]   [  ]   [  ]

5. The increasing numbers of visually impaired people in mainstream further education and training is good news.
   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
   [  ]   [  ]   [  ]   [  ]   [  ]   [  ]

Thank you very much for completing this.
Appendix 4. Published Articles.

4a. Optacon II - a teacher's view.

4b. Further education for all - a resource model.

4c. A new era in the teaching of blind children in ordinary schools.

4d. A breakthrough in cheap computing.

4e. The use of portable computers by visually impaired students in further education.

4f. Portable computers: tools for effective college integration.
Appendix 4. Published Articles.

4a. Optacon II - a teacher's view.

*New Beacon*, April, 1989, p. 118.

Optacon II has been in use with students since last Autumn. How good is it? How does it compare with the old Optacon I? What exactly are the changes - and are they all improvements? These were the questions that occurred to us when we received the brand new Optacon IIs in their packing cases in September. One term later, we felt we were in a position to answer some of these queries.

This is not an attempt at a technical evaluation of the new machine. Other people more qualified than we are in that respect are better placed to carry that out. Rather, this is an attempt to give our initial impressions, as teachers of the Optacon II, of its performance in the learning/training situation.

Our first impressions on unpacking the boxes were concerned with the much reduced size of the machine. Its dimensions are about one half those of its predecessor. The weight of the machine is similarly much reduced. In these days when a "portable system" can require a British Rail trolley to move it about, the lightness and compactness of the Optacon II really are significant features. It will take up very little desk space on the office/study desk top. Its battery is detachable when using the machine from mains power, and this further reduces the Optacon's weight and size.

Against these impressive savings in overall dimensions it must be said that, compared to Optacon I, the new Optacon
does not look as rugged and durable. With its attached leather cover and general air of indestructibility, the Optacon I looked capable of surviving any campaign its user might drag it through. Optacon II is a far more modern looking machine, which would blend in easily with any office interior. Only time will tell if the durability of the original machine will be matched by the new one.

From the teacher's point of view, a very welcome change is the new VDU unit, which is about a fifth the size and weight of the old one. When carrying out support visits to students, the teacher, weighed down by the old unit, would often need several cups of tea to revive sufficiently to function. It was not clear, sometimes, who was giving support to whom.

There are changes to the controls and layout of the Optacon II. The main ones are that the position of the Threshold and Intensity knobs has been moved to the centre of the front panel, which enables the machine to be used equally well by left- and right-handed users. The camera cable is detachable, which should reduce the likelihood of snagging. There is an additional port at the back of which can connect the machine to a computer (IBM or compatible).

The change that was received most cautiously by us was the reduced size of the tactile array. Optacon I has an array of 144 rods, arranged in 6 columns of 24 rods. Optacon II has an array of 100 rods, in 5 columns of 20 rods. As the vital information is received by the user through the tactile array, we were concerned, initially, about any reduction in its size. In practice, this has not proved to be any problem. In fact, comparison studies of an informal nature have thrown up interesting and unexpected results. Experienced Optacon I users who have tried the new machine have commented that the reduced array has not caused any
problem with their reading. Indeed, several have commented that the array on Optacon I seemed unnecessarily large when they went back to using their old machines. One student who had been trained on the new Optacon simply could not get used to the old one with its larger array.

On our limited experience, it seems that a tentative observation which could be made is that transfer from Optacon I to Optacon II holds few difficulties but that from II to I is more problematic. There is some indication that training on the Optacon II may be assisted by the smaller array, as it reduces the margin of space around the letter/word and in that way helps centre the material on the array.

The new machine has had a considerable impact on the teaching/training programme. The computer port of the Optacon II, mentioned earlier, is connected to an IBM (or compatible) in the initial teaching stages. This enables the teacher to input material via the computer more accurately and efficiently than before. It is also possible for students to work independently on practice/skill building exercises and for the teacher and student to obtain printouts. Some experienced users have set out to "beat the machine" by setting a reading speed and then seeing if they can match it reading through the array.

At the moment the software necessary for using the Optacon II attached to a computer for business/study programmes is not available. When it is available we're convinced that this will help ensure that Optacon II remains a valuable accessing tool well into the 1990s.
Appendix 4. Published Articles.

4b. Further education for all: a resource model.


It is clear that if more visually impaired individuals are to succeed in mainstream further education effective support services need to be in place. As early as 1975, NFB/ABAPSTAS argued: "the creation of centres specialising to some extent in the tertiary education of visually handicapped people has .. obvious attractions. Library and other facilities for example might well be enabled to be concentrated to a certain extent, and the braille transcription services to be provided, and a tradition of dealing with visually handicapped people may well develop."

Three years later, the Warnock Report described the importance of support in terms of "an indispensable condition for effective special education" in the mainstream setting (Special Educational Needs, 1978). In 1984 Low spoke of post-secondary education and described the way in which he would like it to develop. "Everyone has a responsibility to make some contribution to better provision for handicapped students", he stated. But he went on to argue that it made sense for, "some institutions going beyond the basic level of provision in catering for those with a certain handicap where this seemed particularly sensible." (Low, 1984).

In 1987, the NFB declared that their "preferred model" was for visually impaired individuals to be in the mainstream, with " a resource centre for the visually handicapped (with specialist staff as well as books, equipment, etc)" (NFB,
1987). More recently still, Moses has argued that, despite moves to increase the number of individuals with special needs in mainstream provision, successful integration demands that resources be made available. "despite the consensus of opinion about the desirability of maximum integration and the legal imperatives that require it, success will be difficult to achieve unless there is adequate support". (Moses, 1988).

What we would wish to see is a fully resources mainstream institution established in order that the range of provision available to the visually impaired individual could be extended. This fully resources facility could be established under a number of different arrangements. A local authority could identify a suitable mainstream college and establish such a facility. Other colleges could then feed into it. A geographically large LEA might wish to establish more than one. An alternative approach might be for a committed national voluntary society to work closely with an interested LEA to establish such a facility. Whatever the particular circumstances, it is certain that the facility would need to attract a number of students so as to ensure the viability of the scheme in the real world. The full range of opportunities then available to visually impaired students would cover the local further education college where this was possible, to the specialist college.

But what do we mean by "fully resources mainstream college"? It is the intention of this paper to establish a possible blueprint. One point is clear: effective planning is essential for success in establishing such a service. It is widely recognised that a lead-in time of six months is advisable, and indeed a longer period can have advantages.

The starting point for most students when they make decisions about their post-secondary education and training
is the college prospectus - or rather getting hold of as many college prospectuses as possible. The prospectus must be readily accessible and this means being produced in tape, large print and braille forms.

For the student the next step is the assessment process. We would make the point, here, that assessment is a two way business, with the student assessing the college as much as the college assessing the student. There would be a threefold input into the student assessment.

The mainstream staff would see if the student had the aptitude to follow the particular course of interest. Their decision would be made purely on the grounds of ability/academic performance that applied to all applicants. The specialist resource centre would assess the state of any functional vision for educational use, and look to determining the necessary support for the individual to function effectively on their chosen course. This would clearly consider previous study methods and, if appropriate, additional/alternative ones. The assessment would determine the near vision needs to ascertain, if applicable, the optimum print size required by a student. Intermediate and distance vision needs would be similarly addressed to determine the optimum distance from the board/chart/practical demonstrations. Appropriate lighting conditions would be investigated. This should include such things as task lighting, copy holders and attention to natural lighting. The use of suitable access technology would be investigated. Strategies for reading, note-taking, testing and examinations would be noted. This information would be documented and forwarded to the mainstream college department.
A third input would come from the careers service, to ensure that the choice of course was a realistic one offering opportunities for employment of further qualifications. We feel it is important to note that this does not imply a stereotyping of particular courses as being particularly suitable for visually impaired people.

Having been accepted on to a chosen course, the student will benefit from sound practical preparation. The needs will be much the same as those of fellow students but with some variations and adaptations to meet special requirements. The student can be encouraged to mobilise the provision of course materials. The development of self-advocacy in this way is seen as an important element in the overall provision. Set texts for the course will need to be discussed and obtained in a suitable format. Personal aids for mobility and low vision are the student's own responsibility. A student will be advised on the necessary action to be taken for the acquiring of such aids. Local information about the college, maps of the area and all information sent to sighted students should be received by the visually impaired student in a suitable format.

Students travelling to college will require a course of mobility training for their route. Where students are residential they will require mobility training for the home route and the local town of the chosen college. Time spent in orientation of the college campus prior to attending college gives the student confidence and a measure of independence. It should be noted that on a large campus essential areas for learning in a mobility programme need to be identified. These include the department lecture rooms, college office, reprographics, tutors' staffroom, library, refectory, and toilet facilities. Students will need to be aware of other facilities, sports halls, etc., and know what is available - ideally mobility training for these areas is
given on request. A flexible approach to accommodation, aiming to suit most students' needs is obviously desirable. Whatever the choice of accommodation, support should be available out of college hours.

College induction periods for new students are a usual procedure. Where this is not the case, an effort should be made to introduce the visually impaired students to tutors and relevant college administration staff before the start of term. For many students the further education college will be a new experience. In the school environment pupils follow an organised routine and usually receive a high level of support. But the college environment expects a higher level of student self-direction. A pre-study skills course can help the visually impaired student to organise their work and have a better understanding of their needs in a lecture situation. Such a course should aim to improve students' note-taking skills, train them in the use of appropriate equipment, and provide a detailed understanding of accessing course materials.

Some students may require a prolonged foundation course to enable them to study effectively. Early planning for any course would ensure that time is available for this. Success will depend upon a number of variables. These include sympathetic assistance of the tutors and the college's policy with regard to accepting students with visual difficulties. At the same time a very important factor will always be the student's own grit and determination to battle through in the face of problems.

Records of student needs should be kept and updated regularly. They should include progress in the college and the changing support needs. Personal details should include only the relevant information needed in support of the student. Records should be open for students and staff, and
joint participation encouraged. An assigned specialist tutor would be responsible for monitoring progress, mobilising support and keeping abreast of progress within the course. Where additional tutorials are required, these could be arranged through the specialist tutor who will also be able to offer the on-going teaching of specialist skills. These could be anything from the use of new technology to more effective use of study time. Mainstream colleges have their own counselling services and tutor groups to which all students have access. Students need active encouragement to direct their own support and may need to be coaxed in the early days. It may be appropriate in some cases to provide the student with direct support in the learning environment - whether for safety reasons or for and early familiarisation with equipment and layout, or simply to establish confidence with a new facility. Whatever the reason, the student will be encouraged to direct this initiative.

It is clear that the area of financial support for students in further education is an important and complicated one. Adams, writing for the Society of Chief Education Officers, has used the term, "chaotic diversity" (Adams, 1986) to describe these complexities. There can be involvement with the local education authority, the Department of Employment and Department of Health and Social Security. As part of the support services that should be in place, financial advice and guidance for students is of fundamental importance. If such support is not part of the overall support structure, it could well be the case that potential students could fail to secure the necessary funding that will enable them to continue their education and training.

It is often the case that the degree of support required by an individual is greater at the beginning of a course and tapers off as the course progresses and he/she attains a
greater degree of independent control of the college environment. This should be reflected in the financial support of the student. If the costs of the support structure can be seen to be on a sliding scale which reflects the growing independence of the student, then these costs savings should encourage funding bodies to look more favourably on applications.

All college staff, as well as students, will need to get ready for the integrated course. Preparation for course tutors will depend upon their previous experience with visually impaired students. A basic knowledge of the student’s eye condition and how this effects the learning situation is a requirement for course tutors. An understanding of the material needs and appropriate teaching techniques is clearly also required. It is not the intention to suggest that preparation means tutors need to adapt their teaching methods, but rather that they should acquire a clearer understanding of how a non-sighted student can be effectively helped with small attentions to teaching details. In-service courses are a way of providing tutors with this information.

Course tutors are often primarily concerned about obtaining materials in a suitable medium for students with visual impairments. This is an important part of the integration blueprint and one that is often the obvious physical dimension in the sense of expensive hardware. The technical (often computerised) support service would have two dimensions: in-house support; and close liaison with external agencies. In-house provision would cover the production and transcription of materials in the appropriate medium - including braille, large print, tape tactile diagram and enlarged print diagram. It would also cover specialist hardware loans, training and hardware maintenance and trouble shooting. For example, if a student wished to
use a Braille n’ Speak portable electronic note-taker, he/she could do so, be trained in its use and have access to a technical officer if there were any hardware problems. A reader service and specialist library with braille, tape and large print material would also be provided, the latter liaising with external agencies such as RNIB student services and the outreach facilities of other specialist colleges to ensure that the general availability of text books and other materials would be maximised.

An important feature of any scheme to provide mainstream provision for individuals with special needs is the social dimension. Individuals with visual impairments would be regarded in the same way as any other student on a mainstream course, with full access to all the facilities afforded to any other student. This would principally mean the student facilities of the college which individuals would be encouraged to fully utilise. Students would also be encouraged to explore and use, where appropriate, the facilities of local town and environment.

The locating of the new RNIB college at Loughborough was a fully researched project which aimed at establishing an association between a suitable mainstream college and a specialist resource facility. A number of colleges were approached and evaluated and the final choice fell on Loughborough. This has provided a national opportunity for students to be fully integrated in a mainstream college with a support structure as close as possible to the outline detailed in this paper. Time will tell how successful in practice this new approach will be.
References


NFB/ABAPSTAS. Educational provision for the visually handicapped. The Teacher of the Blind, Autumn 1975.


Appendix 4. Published Articles.

4c. A new era in the education of blind children or the teaching of the blind in ordinary schools.


Not another book advocating the principle of the integration of visually impaired pupils into ordinary schools? The arguments have been presented many times and the advantages and disadvantages of different schemes have been discussed at considerable length. Is there anything left for Mr Barnhill to cover? Is there really any need for another book in this congested field?

Well, in fact, there should be room on any professional's shelf for this remarkable book. Alexander Barnhill's work is a pioneering attempt to bring about important and dramatic changes in the way education for the visually impaired is delivered. His work has been in the Glasgow area and has been so successfully that, in the author's words, he felt it, "imperative ... to call public attention to the matter". The author has not dealt with abstract theories of integration. He comments that such discussions seemed "to leave the subject very much where it was." Rather, he has looked at the integration of visually impaired pupils into ordinary schools as a practical concern. The results of his "system" have been notable for their success under a number of headings, such as academic
achievement, social development, and societal acceptance.

It was not Alexander Barnhill's Intention to write a polemic for the integration lobby. He is at great pains to point out that he sees the range of services provided to visually impaired pupils as extending across the spectrum from mainstream to residential special school, individual circumstances determining individual placement. He is convinced that "existing institutions ... serve valuable purposes" and adds, "Teaching blind children with the sighted has not been advocated for the purpose of withdrawing children from institutions". Barnhill, then, clearly supports the idea of mainstream education being complemented by the special school, when appropriate. This view would seem to place him on the "high middle ground" of current debates on the subject.

Barnhill's book is very much about the practical day-to-day problems and solutions that occurred when a number of visually impaired pupils were integrated into ordinary schools in the Greenock area. The author takes the reader from the earliest stages of dealing with the educational authority to dealing with teaching staff who were to be involved in the scheme. He is particularly interesting when discussing how initial reservations and reluctance turned to interest and enthusiasm. Barnhill clearly acknowledges the vital importance of positive staff attitudes. Curricula adaptations and changes in the modes of delivering services are closely described. This really is a "nuts-and-bolts" approach to integrating pupils with special educational needs. Barnhill deals with monitoring academic progress, observation of social interaction and development, and post school follow-up procedures.

In passing, the author makes some observations on the benefits, as he sees them, of the provision of integrated
services. Indeed, it would be surprising if he did not. An 
important issue that he returns to a number times is that of 
parental choice - "giving the opportunity to parents of 
having their children educated at home". He also considers 
the sociological aspects of "alienation" and the effects of 
"stigma" on personal development and writes of, "parents 
[who are] unwilling to have them [their children] admitted 
to an institution". A phrase that seems to recur is 
"restored to society", and this may be the basic concern 
that has spurred him in his work. Barnhill writes of 
removing "barriers to education" and of promoting "common 
associations" and a wider range of opportunities. He 
describes the visually impaired schoolboy "as he mingles 
with school-mates in their gossip, their fun, their lessons, 
the common incidents of school".

The need for technological support for visually impaired 
pupils is addressed clearly in this book. Barnhill states 
that for them to succeed in the ordinary school, "it is of 
the utmost importance that these children should receive all 
the appliances needed for their education" adding that 
"these would seem to be a legitimate charge on the education 
authority". In the Greenock area, adequate provision in 
this regard has been made to Barnhill's satisfaction.

This brief review of A New Era has so far not covered the 
most remarkable feature of the book. That is that it was 
originally published some time ago. This fact makes its 
comments on the provision of integrated services of even 
more interest and, what is amazing, fairly central to the 
debate over integration that has progressed in the past five 
years or so. In fact, the book was published in 1875. That 
is not a misprint. It really was published in 1875. I came 
across it recently while browsing in the Reference Library 
at the Royal National Institute of the Blind. What is even 
more surprising is that there are references in the book to
schemes of integrated provision that predate Barnhill's work by 30 years or more. It is clear that one of the major reasons for schemes such as these was that numerous children with visual impairments were being neglected, for one reason or another, by the established institutions and that integration in local schools was their only hope for an education. There seemed little doubt, however, about the success of these integration schemes. The book provides more, and early evidence that the integration of children with visual impairments can certainly work effectively.

Reference

Appendix 4. Published Articles.

4d. A breakthrough in cheap computing.


Many people are tempted to enter the world of computing by buying one of the very low priced machines in the Amstrad PCW range. These machines come complete with wordprocessing software, printer, all the necessary cables and a comprehensive manual. The only drawback was that the characters on screen could not be enlarged and so for most visually impaired users the machines were of no use whatsoever. Instead it was necessary to move up-market to the fully blown IBM compatible PC which, with software and printer, could easily more than double the financial outlay required.

I can remember being asked for advice by people over the years on how to get increased character size on the PCW screen. Unfortunately, there was no way of doing so, and this obviously caused a good deal of disappointment among potential visually impaired users. Indeed, there was a case where a student had actually been badly advised and gone out and bought an Amstrad 9512, only to find it was entirely unsuitable. Fortunately, the student was able to take the machine back to the supplier and negotiate a deal on a more expensive PC (without printer) and allow the price of the PCW against it.

All this has changed. The Amstrad PCW range now has the facility to increase screen characters to double height and double width size. This does not sound a great deal, but on the screen it makes a tremendous difference. Each letter is
four times larger than the original. It makes the machine a possibility for a wide range of visually impaired users who would struggle with the ordinary character size or find it virtually impossible to use. The enlargement is simple and unsophisticated. It is limited to the input and display of files. The menus cannot be enhanced in this way. Users would have to become familiar with the commands if they could not read them on screen. I suspect that use of a magnifier would enable a good many people to become familiar with the Locoscript programme. Then they could work from memory or remind themselves by a quick look through a magnifier at the on-screen menus.

The large character comes up the moment you begin to key in a file. The enlargement includes the cursor, which is now a large block almost half an inch high. (I know, because I have just measured it as I am using the screen enlargement to write this). For people who know the misery of trying to find the diminutive cursor that exists in some software, this will be a very welcome feature. This is not in any way a sophisticated programme which can be compared to many of the character enlargement software packages available for PCs. This is obviously a drawback, but it can also be seen as an advantage. There are no extra commands needed to control the enlargement process. It is simply there, and follows the large and easy to find cursor. There is no complicated set-up routine to get the system under way. For many people this simplicity is a bonus. Amstrad have sold around one million PCW machines and, apart from the low price, simplicity of operation is an important factor in this success.

The PCW is intended to be used primarily as a wordprocessor. The machine can be used as a computer and run other applications such as spreadsheets, databases, communications and desk-top publishing. However, the screen enlargement
facility is part of the wordprocessing package, and the large characters would not be available for these other applications. For most users, though, it would be the wordprocessing that was the main reason for buying the PCW. For similar reasons, many thousands of these machines have been bought by colleges of further and higher education, where they are used for secretarial courses and for general student use. Clearly this new facility would enable many more students with visual difficulties to take part in these courses, where before the machines could have been seen as a barrier to access. I wonder how many colleges which have the PCW machines (and the old version of Locoscript) know of this enlargement feature on Locoscript 2.31?

There is some interesting news on the Amstrad PCWs. The company have relaunched the range but made significant changes to improve some of the hardware. They have abandoned the old three inch disc drive that nobody else used and which as a result is expensive to buy. Now the industry standard three and a half inch disc drive is in place. The choice of printer has been expanded to include a state of the art bubble jet printer for superior quality printed output. Recommended retail price for the range of machines is £399–£549 (ex VAT), and discounts are available for those who shop around. If you already have a PCW, Locomotive Software will provide a cheap update with the character enlargement facility.

I suspect the Amstrad PCW is on its way towards the two million sales mark. Now it is a success in which many more visually impaired people can take part.
Appendix 4. Published Articles.

4e. The use of portable computers by visually impaired students in mainstream further education.


Hawkridge, Vincent and Hales have noted that, "Technology - its promise (for integration) will be fully realised only when personal and portable systems, one for each student, become available" (1985). They are now available and in use at Lougborough College. Ten visually impaired students were asked to complete a questionnaire to discover the value of portable computers.

The students covered a wide range of courses - BTECs (at all levels) and A levels. The subjects ranged from Computer studies and Business courses to areas such as Sociology, Literature, Science and Care. The range of visual disability was also large and included students with central loss, peripheral loss and combinations of both. All were registered blind or partially sighted. All were in varying degrees able to use residual vision. The basic equipment in use is the Amstrad 386 and the Toshiba 1200 computers, Canon portable Bubblejet printers, and CGA and VGA external monitors. The Toshiba has the advantage of lightness but the disadvantage of a CGA screen. This restricts the choice of access software effectively to Solo. Some students, typically those with eye conditions with a narrow field of vision, can use the unenhanced backlit screen. The Amstrad 386 laptop is heavier and larger. It has a VGA screen enabling newer and more sophisticated screen enlarging software. The carrying case has room for a Bubblejet printer. This makes a neat (but rather heavy) package.
Some students have found external monitors advantageous. This may strike some as an invalidation of the concept of portability. After all, if you use an external monitor portability is obviously reduced. In practice, this appears not to be so. Effective notetaking relies on good keyboarding skills and there is less need to check work. Mistakes can be corrected later using an external monitor located in the student's study bedroom or a college based desktop P.C.

The survey indicated that laptops are quite heavily used in the average week. 70% of the students indicated an impressive ten hours or more use and 30% more than 15 hours. These figures would not be the total hours on computers in any week as virtually all the students would also use desktop PCs as well. Students were asked about the use of laptops for notetaking. 50% used them for this purpose. The notes could be kept on disc for reviewing later or be run off on a Laserjet printer in the appropriate font and size, using the colour of paper best suited to the student (pink, blue and green are presently used, as well as white).

Clearly there were other important uses. It is generally accepted that it can take a visually impaired student longer to complete tasks. The availability of portables means that work can be carried on more easily in study periods and outside college hours. 90% of the students strongly valued laptops for producing assignments. This reflected the fact that many were on BTEC courses where the ability to meet deadlines is vital. Printing out on portable Bubblejets has proved to be a valued additional facility. This has been particularly true where the student may be up late to meet the next morning's 9.00 a.m. deadline. Before the Bubblejets were used it was quite usual to have a student
waiting in a state of quiet desperation to gain access to the Laserjet at 8.30 a.m.!

The improved presentation of work produced on computers is another bonus. Many of the college courses (if not all!) place strong emphasis on good presentation. Dayan has commented on the role of computers in this area. She states, "the resulting presentation must be good; the aim is to bring the student to to the same level as others" (1989). In fact, the visually impaired students at Loughborough have this advantage over their sighted peers who do not generally have laptops. It maybe that this restores some of the balance towards visually impaired students in the mainstream setting. 90% indicated that they strongly valued the improved presentation of work when using laptops.

An important consideration in the use of portable computers by students is that they are gaining experience in a way of working which may well equip them for the future. 70% of students agreed that this was the case. 20% indicated that they strongly agreed. It is clearly not an immediate issue for the students in the survey. Nonetheless, I felt that this was an impressive appreciation of the potential value for visually impaired people of portable computing technology. This ties in with Scadden's view that there was, "much to gain from the initiating of activities to promote and facilitate use of computer and sensory aid technology by blind and visually impaired individuals in the performance of educational (and) employment activities ... in the future". (1984).

I was interested to see what general view the students would take on laptops based on their own experience. There can be a tendency to overlook the collective view of students when considering factors that make integration effective. On this
one narrow aspect of the debate it is clear that the students' view is overwhelmingly (80%) positive on the importance of this equipment in the success of visually impaired students on mainstream courses.

REFERENCES


Appendix 4. Published Articles.

4f. The use of portable computers: a survey of visually impaired college students.


The use of portable computing has been seen by many professionals in the visual impairment field as a valuable contribution to the success of students with visual difficulties in open education. Hawkridge, Vincent and Hales noted that, "Technology - its promise (for integration) will be fully realised only when personal and portable systems, one for each student, become available" (1985). Hegarty has commented in relation to increasing integrated provision that, "advances in communications technology will make it easier" (1987). This is very much the position that we take at Loughborough College.

Ten visually impaired students who make use of laptop computers took part in a survey to discover the ways the computers were used and the value of these machines to the students. The students covered a wide range of courses. These ranged from the popular Computer studies and Business courses to areas such as Sociology, Literature and Science. The range of visual disability was large and included students with central loss, peripheral loss and combinations of both. All were registered blind or partially sighted. All were in varying degrees able to make use of residual vision. I feel that a student using non-sighted methods would similarly benefit from this technology but the survey did not include a student in this category.
The survey indicated that the laptops are quite heavily used. Students were asked how many hours were spent on them in a typical week. 70% of the students indicated that they use the portables for an impressive ten hours or more. 30% stated they used them for more than 15 hours. This seemed clear evidence of the usefulness of the machines on mainstream courses. These figures would not be the total hours on computers in any week as virtually all the students would also use desktop PCs for some of their work. These would be the machines in Loughborough College computing rooms or the Visual Impairment Resource Base.

Students were then asked about the use of portable computers for notetaking. Some students (50%) used them in class to make notes for future reference. The other students, however, did not use the laptops in this way. This is quite an interesting observation as it is generally felt that notetaking is the main use of this equipment for visually impaired people in a mainstream environment. The 50% of students who responded negatively still valued portable computers very highly. This was clear from responses later in the questionnaire. It seems that other important uses of this equipment need to be recognised.

The students who did use the portable computers for notetaking indicated a variety of methods for storing and reviewing their work. The notes could be kept on hard disc for reviewing later. This method obviously enjoyed the advantages of very fast file retrieval and search facilities for getting the information quickly. It could then be displayed in the preferred screen character size. Alternatively, the notes could be run off on the HP Laserjet printer in the Resource Base in the appropriate font size and style and on the colour of paper best suited to the student (Pink and Blue are presently used to reduce off page glare, as well as White).
Students were asked about their use of laptops for college assignments. It is accepted that it can take a visually impaired student longer to complete work. The availability of portable computers means that college work can be completed more easily in study periods and back in a student's room. A massive 70% of the students surveyed strongly agreed with the statement about the value of the portable computers for assignment work. This reflected the fact that the large majority of the survey population were on courses where assignment work is particularly important and where the ability to keep to set deadlines is vital.

Printing out work on the portable Bubblejets has proved to be a valuable facility for students. This has been particularly true in those cases where the student may be up working late to meet the next morning's 9.00 a.m. deadline. Before the Bubblejets were used it was quite usual to have a student waiting in a state of quiet desperation for the resource base to open and gain access to the Laserjet at 8.30 a.m. or earlier! Although the quality of the bubblejet printing is not as good as the Laserjet the assignments are for fully sighted tutors to read and there is not the same need for clarity and control over the depth and size of print.

It seems that the access to computing outside normal college hours is an important factor in enabling visually impaired students to succeed at Loughborough College. Despite the opening of some of the college computing facilities in the evenings, it is clear that even greater computer access is valued by the students. A full 100% responded in the top two positive response groups to the statement on this matter. This was the only question which produced such a strongly positive result. It seems clear that the use of laptops at the weekends and evenings is of particular value.
to the students concerned. Anecdotal evidence indicates that it is not uncommon for students to be working on the machines into the early hours.

The improved presentation of assignments produced on computers is a bonus. Many of the courses at Loughborough College (if not all!) place a strong emphasis on good presentation. I feel that students using laptops have this advantage over their sighted peers. Dayan has commented on the role of computers in this area. She states, "the resulting presentation must be good; the aim is to bring the student to the same level as others" (1989). I think that I would argue a stage further and suggest that it may, in fact, give visually impaired student an advantage over sighted students who are generally not provided with this type of equipment. It maybe that this restores some of the balance in the mainstream setting. It is clear that the students in the survey highly valued the improved presentation of their work. This item also received a 90% positive response in the strongly agree (70%) and agree (20%) range.

An important consideration in the use of portable computers by visually impaired students is that they are gaining experience in a way of working which may well equip them for the future. It is quite likely that skilled use of a portable computer will be a significant tool for independent work long after the completion of a Loughborough College course. The students were asked about whether the use of portable computers was providing an important skill for the future. 70% of students indicated that they agreed with this statement and 20% indicated that they strongly agreed with it. It is clearly not an immediate issue for the students in the survey. Nonetheless, I felt that this was an impressive appreciation of the potential value for visually impaired people of portable computing technology.
This ties in with the views of Scadden who wrote that there was, "much to gain from the initiating of activities to promote and facilitate use of computer and sensory aid technology by blind and visually impaired individuals in the performance of educational (and) employment activities ... in the future". (1984).

The students were asked whether they felt they had received adequate training in the use of portable computers. None of the students strongly agreed with this statement. This was the only item where this was the case. Although 60% stated that they did agree I feel that there is some evidence here of a need for more training. All the students had received initial training but little more once the basics were in place. It is always the case that individuals will learn a lot by using the equipment as a study tool. Nonetheless, I feel that a programme of skill updating is probably indicated by a fairly modest response to a statement about "adequate" (but no more than that) training... This seems to confirm the view that Dayan put forward that there seems to be insufficient "emphasis on the importance of teaching individuals to use the equipment and monitor its use" (1989).

The students were asked about other uses for portable computers not mentioned in the questionnaire. There was some interesting answers to this. Some were very specific. For example, one student described using the portable computer for working out coordinates for programming on screen while the rest of the group used graph paper. The more general comments were, perhaps, of more significance. Several students mentioned that the independent exploration of a range of software was a valuable bonus. One student wrote in a similar vein of using self teaching discs to learn new software. Another mentioned the use of the portable computer for general and personal correspondence.
At a basic level a student noted that keyboarding skills could be improved by practice outside the classroom. All these contributions seem to be good evidence for the view that independent action is encouraged by the use of portable computers. It was interesting to note that none of the respondents mentioned playing computer games on the laptops. It could be that they did not do this or, alternatively, they did not want to draw attention to it!

The basic equipment in use by the students is the Amstrad 386 and the Toshiba 1200 computers. This is supplemented by Canon portable Bubblejet printers, and CGA and VGA external monitors. The enlarging software used is Dolphin System's Lunar and Solo. The equipment was bought on the advice of the technical services department after a thorough examination of the available range. This is, of course, always changing. Initially, the Toshiba was considered the best tool for the job and became the "default" choice. However, technological advances (particularly in the area of screen output) and price changes led to the current selection of the Amstrad 386. Currently notebook computers are under examination. The equipment is covered by the college insurance cover, provided the students sign a form which commits them to take proper care of it.

The Toshiba has the advantages of lightness and therefore greater ease of portability but the disadvantage of a CGA screen. This restricts the choice of enlarging software effectively to Dolphin's Solo. This package is now quite an old one and has been overtaken by newer products. It is possible that other programmes such as LPDOS would work, at least partially, with the CGA screen. Some students, typically those with eye conditions with a narrow field of vision, can use the unenhanced Toshiba backlit screen. The Amstrad 386 is much heavier and larger than the Toshiba. It has proved to be very durable and trouble free. It has a
VGA screen which enables it to run the newer Dolphin's Lunar screen enlarging programme - which is the one generally preferred by students. It would also be able to run other screen enlarging software successfully. In the Amstrad carrying case there is room for the Canon Bubblejet printer. This makes for a neat (and not too heavy!) package.

Some students have found that using an external monitor has been very advantageous. Indeed, some students would not have been able to make effective use of the portable computers without one (even with on screen character enlargement). This may strike some people as an invalidation of the whole concept of using the equipment. After all, it could be argued that if you have to use an external monitor the value of portability is lost. In practice, this appears not to be the case. This may be because the use of the equipment for note taking in class is not necessarily its main use. The external monitors have been based in study bedrooms or strategically placed in Loughborough College.

I was interested to see what general view the students would take based on their own experience with portable computers. It is noticeable that there is a tendency with surveys on mainstreaming to ask everyone, other than the students involved, what factors make for effective integration. We have the views of teachers, administrators and other professionals. On this one technological aspect of the debate it is clear that the students' view is overwhelmingly (80%) positive on the importance of this equipment in the success of visually impaired students on mainstream courses.
REFERENCES


References


BARNHILL, A. (1875) A new era in the education of blind children; or teaching the blind in ordinary schools. Glasgow, Charles Glass and Co.


BRADLEY, J. and HEGARTY, S. (1982) Students with special needs in F.E. Windsor, FEU/NFER.

BRADLEY, J. and HEGARTY, S. (1982) Stretching the system. F.E. and related responses to students with special needs. Windsor, FEU/NFER.


335


CHRONICALLY SICK AND DISABLED PERSONS ACT, Eliz 2. 1970 London, HMSO.


Educare, October, 12-14.


EDUCATION ACT, 7 & 8 Geo.6, 1944. London, HMSO.


340


F.E.U. (1986) Special needs occasional papers, 1, 2 and 3. York, FEU/Longmans.


ILEA. (1985) Educational opportunities for all? The report of the committee reviewing provision to meet special educational needs, chaired by Mr. John Fish. Inner London Education Authority.


347


ROYAL NATIONAL INSTITUTE FOR THE BLIND. (1972) The education of the visually handicapped: comments by the RNIB to the Department of Education and Science on the report of the Vernon Committee. London, RNIB.


SPECIAL EDUCATIONAL NEEDS. (1978) The report of the committee of inquiry into the education of handicapped children and young people; Cmnd. 7212.


Appendix 63: memorandum by the National Federation of the Blind of the UK and the Association of Blind and Partially Sighted Teachers: the implementation of the Education Act 1981 with respect to special educational needs provision, 190-194.

Appendix 64: memorandum by the Royal National Institute of the Blind, 194-196.

Appendix 65: memorandum by the Headteachers of Special Schools for the Visually Handicapped in England and Wales, 197-198.

Appendix 66: memorandum by the National Association for the Education and Welfare of the Visually Handicapped, 199.


STOWELL, R. (1987). Catching up?: provision for students with special educational needs in further and higher education. A survey carried out for the DES and NBHS. London, HMSO.


