UNIVERSITY COLLEGE LONDON

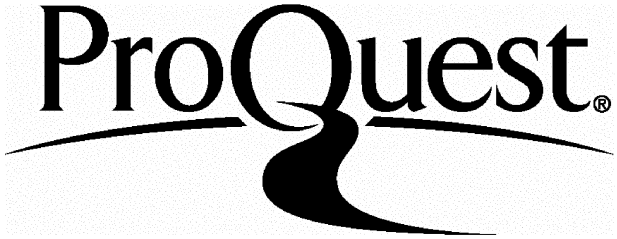
DOCTORAL DEGREE IN CLINICAL PSYCHOLOGY

VOLUME 1

RESEARCH THESIS

IMOGEN R M TATCHELL

1997



CONTENTS

RESEARCH THESIS

"Do 'Transitional' Social Problem Solving Skills Affect Levels Of Distress Reported By Adolescents With Learning Disability?"

ABSTRACT

In the context of high prevalence of psychopathology amongst the learning disabled population, the area of adolescent transition was explored. Six transitional 'problem' scenarios were constructed to provide a relevant measure of social problem solving skills. These were correlated with reported measures of depression, anxiety and stress. There was no evidence of a relationship between mood and social problem solving skills in this sample. Factors that may contribute to the existence of psychopathology are discussed.

INTRODUCTION

A number of research studies have demonstrated levels of psychopathology that are higher in the learning disabled population than exist in the general population (for example Rutter et al 1976, Gillberg et al 1986, Iverson & Fox 1989, Enfield & Tonge 1996). Within these studies the incidence of depression, psychosis and behaviourial disorders are noteworthy.

The presence of depression and low self esteem has concerned clinicians and researchers alike for some time. In a study of the prevalence of psychiatric disorders in a large residential facility, Crews et al (1994) found over half of the people who were diagnosed as mentally ill were found to be suffering from depression, and this phenomena does not appear to be restricted to adults. Stevenson & Romney (1984) found that the children in their sample who showed the most depression also had the lowest levels of self esteem. The lowest levels of self esteem in a study by Szivos-Bach (1993) were found in students who perceived the greatest stigma in relation to their learning disability. Matikka (1996) found that feelings of stress were associated with a lack of self esteem and awareness of disability in a study that examined psychological factors and perceived quality of life of people with learning disability living in the community.

In a review of the literature related to emotional and behaviourial disturbances in young people with handicapping conditions, Bryan & Herjanic (1980) suggested that those with milder or less visible handicaps may be more at risk of poor adjustment. There is some evidence to suggest that young people with learning disability may be particularly vulnerable. Of a group of young people who had suffered hydrocephalus as infants, those who had learning disabilities were found to have the lowest self-esteem (Fernell & Gillberg, 1992).

Adolescence can represent a difficult time for young people with handicaps. A growing awareness of being permanently different from peers, inability to fully participate in recreational activities, and conflict and confusion about sexual maturity (Bryan & Herjanic 1980) are just some of the challenging issues that face these young people.

The formulation of ideas for the project

This profile of low self esteem and mood is observable across services for people with learning disabilities. For example, during my contact with a secondary school for young people with mild and moderate learning disabilities, this issue of low self esteem and mood emerged again. The 15 and 16 year olds I visited at the school had just completed a period of work experience which few of them had enjoyed. During the class discussion, the

young people consistently presented as being low in mood and self esteem, and appeared despondent about the future. When I discussed these observations with teachers, clinical psychologists and parents it became clear that they too viewed these phenomena as areas of concern. This made me hypothesize that if life feels this bad already, the prospects for adjusting successfully to adult life were not good. That is, they could potentially be at risk for the development of more severe mental health problems.

If adolescence represented a critical period for young people with learning disabilities, then the existence of low esteem would undermine the young person's ability to cope during this time. It may be that the transition to adulthood was for an adolescent with learning disabilities much more troublesome than for the non-disabled adolescent. Literature searches (Psychlit/handsearch) revealed nothing that explored the experience of young people with learning disabilities, or how they were coping with this period in their lives. Paradoxically, there was literature about the experience of their parents and siblings during this time.

The project aims

In this project I attempted to establish how young people with learning disabilities managed some of the contentious

transitional issues with which they were faced.

A core area of investigation was their social problem solving skills. This was because of the hypothesized relationship between social isolation and the under development of effective problem solving skills (eg. Vygotsky 1978, 1987, Nezu et al 1991). A common feature of life for people with learning disabilities is social isolation.

If social isolation does lead to poor problem solving ability, then young people with learning disabilities may be particularly vulnerable during adolescence when many problem solving demands exist. If problem solving ability is related to levels of distress, (and distress is taken as a measure of not coping). Then if a relationship between lower problem solving skills and higher levels of distress could be demonstrated, this would suggest that intervening in the area of problem solving could be beneficial for these adolescents.

There was a dearth of research in this area. So a heuristic was needed for exploring these issues. In order to look at areas related to the adolescent transition to adulthood required the incorporation of these issues into a relevant measure. This I did by constructing 6 short stories, Vignettes, about issues that were potentially contentious for adolescents with learning

disabilities (for more detail see Method below).

Structure of the literature review

The background information is structured as follows. I begin by discussing terminology, diagnosis, subtypes and prevalence of learning disability. I then introduce some theory about the fundamental problem solving difficulties of people with learning disability, and its more recent applications to problem solving training that may be used in therapeutic interventions. This is followed by a review of literature illustrating high levels of psychopathology found in people with learning disability. Then the factors that may contribute to the development of psychopathology including more socially oriented explanations are considered. Some research that has considered specific emotional factors is described before a consideration of recent literature regarding problem solving. Finally the area of adolescence and the role of parents of children with learning disabilities is discussed.

Terminology

The terms used to describe what is now subsumed under the generic phrase of "learning disabilities" have changed many times over the last two decades. This is unique and unparalleled in any other clinical population. These changes stem in part from

attempts to arrive at a description that is not considered derogatory, but must also reflect the contentiousness of working with this group of people if the associated professionals have experienced such difficulties in arriving at an acceptable term (Sinason 1992).

In the not so distant past expressions such as "feeble-minded", "cretin", "educable" and "trainable" were used as formal diagnostic categories. The term "Mental retardation" was popular for sometime but fell out of favour in the UK (although is still used in America), and was followed by "mental handicap". This too has more recently become subsumed by the term "learning disabilities", "learning disability" or "learning difficulties". The rather unfortunate result of these changes is that many people are still quite confused about what exactly these terms mean.

It is, nevertheless, important to use a term that does not connote derogatory and disrespectful associations which "Learning disabilities" does, albeit at the risk of being unhelpfully vague. For the purpose of this thesis I will specify that when I use the phrase "Learning disabilities" or "learning disability" I am referring to individuals who have a significant intellectual impairment which impedes their ability to adapt functionally and cope with the normal demands of life. I will use this phrase interchangeably with mental handicap and intellectual impairment.

Diagnosis

The Diagnostic and Statistical Manual of Mental Disorders IV (1994) an American publication, still refers rather insensitively (and unfashionably) to individuals with Mental Retardation. This is considered a 'developmental disorder' which means it is usually evident in childhood. A positive diagnosis is made on the basis of the presence of three criteria:-

- significantly sub-average general intellectual functioning
- significant limitations in adaptive functioning
- onset before the age of 18 years old.

It is acknowledged that intellectual impairment can occur outside the developmental period as a result of an illness or an accident for example.

General intellectual functioning

Intellectual functioning is assessed by the administration of standardized individually administered psychometric tests like the Wechsler Intelligence Scale for Children-Revised (WISC-R) or the Kaufman Assessment Battery for Children (K-ABC). These tests yield an Intelligence Quotient (IQ) which has a mean of 100 points which is equivalent to the population average. Below average intellectual functioning is defined as an IQ of two or more standard deviations below the population mean, and is

equivalent to an IQ of 70 points or less. People who fall into this category are in first percentile, that is, the lowest 2.5% of the IQ distribution. In practice, because of the limitations of confidence levels in these tests, there is conventionally a measurement error of around 5 points which means that an IQ of 75 would still fall into the category of 'subaverage intellectual functioning' (DSM IV, 1994). Although IQs of between 70-80 are often referred to as 'borderline' learning disabilities.

Adaptive functioning

Included in the realm of 'adaptive functioning' specified by DSM IV (1994) is communication, use of community resources, self-direction, social and interpersonal skills, self-care, work, leisure, health and safety, home living, self-direction and functional academic skills. DSM IV specifies the need for the presence of significant limitations in at least two of these areas of adaptive behaviour for fulfilment of the criteria. Assessment can be carried out by using scales such as the Vineland Maturity Scale. Less formally, this information can be readily acquired from parents, nursery or school. In practice, significant delays or problems in development generally may precipitate the referral which leads to diagnosis. Zigler & Hodapp (1986) note that the diagnosis of mild learning disability (see below) is seldom made before the age of 3 or 4 years.

Degrees and prevalence of intellectual impairment

The total prevalence of mental handicap represents about 2% of the population (UK Office of Health Economics, 1978). In practice the prevalence rate varies according to the criteria adopted for classification. There is inconsistency about the use of IQ and adaptive functioning. Some studies classify only by IQ and others include 'borderline' individuals (Zigler & Hodapp 1986). Intellectual impairment was divided into four subcategories:- Mild, Moderate, Severe and Profound, by the World Health Organization Expert Committee in 1968.

Mild intellectual impairment

An IQ level of between 50 and approximately 70 is considered to be mild. Approximately 80% fall within this category (DSM IV, 1994). This group usually develop social and communicative skills in the pre-school years, and may not always be distinguishable from their peers until some years later. Educationally they are likely to be able to cope with the demands of mainstream school until around the end of primary school. As adults, this group usually acquire social and work skills sufficient for "minimal self-support" (DSM-IV pg.41), but may require extra support at times of stress. Their prospects for living successfully in the community are good, and some individuals are able to live independently.

Moderate intellectual impairment

The group considered to have moderate intellectual impairment have IQs of around 35-40 to 50-55, and represent approximately 10% of the learning disabled population (DSM IV, 1994.) Children in this group usually acquire communication skills in childhood years and progress to an academic ceiling around the age equivalent of 6-7 years. Potentially, this group of people may be able to travel independently to familiar locations, and attend to their personal care with some supervision. Vocationally, as adults the majority will be able to carry out unskilled or semi-skilled work perhaps in a sheltered workshop or with support in the general work force. These individuals tend to live in supervised settings.

Severe Mental Impairment

This group of people have IQs between 20 and 25 to 35-40, and represent approximately 3% to 4% of the learning disabled population (DSM IV, 1994). They tend to acquire little or no communicative speech in early childhood, but may do so during their school years. They can be helped to acquire basic self-care skills and "pre-academic" skills like basic counting, the alphabet, and perhaps sight reading of crucial words. As adults they are likely to be able to perform some simple tasks with close supervision.

Profound Intellectual Impairment

Approximately 1% to 2% of the learning disabled population are considered to have profound intellectual impairment, and this would approximate to IQs of 20-25 or below (DSM IV, 1994). People with this degree of handicap usually have some form of neurological condition or organic pathology. They will often have considerable sensori-motor impairment too. Some individuals can be helped to acquire some communication and self-care skills with intense support/supervision.

Co-morbidity and Etiology

There is a widespread assumption that 75% of people with learning disability show no organic pathology, and that 25% show damage due to pre-natal, peri-natal or post-natal insult (Tarjan et al, 1973). Indeed there are a number of identifiable conditions that occur with developmental disability, such as Down's Syndrome, Tuberous Sclerosis, Phenlyketeneuria, Epiola and Fragile X syndrome and Autism. Peri-natal problems such as fetal malnutrition, congenital maternal Rubella, premature birth, and hypoxia are predisposing factors. Other associated conditions are acquired such as infection (eg.meningitis), poisoning, anoxia or trauma.

However, in a survey of literature that empirically investigated

the ratio of organic to etiology-unknown cases, 55% of the cases of mental handicap involved organic etiology and only 45% were linked to unknown causes (Zigler & Hodapp, 1986). This suggests that organic factors may be responsible far more often than was once assumed.

The etiology of mental handicap in those who have no organicity is uncertain. Factors such as a poor gene compliment for IQ (Gottesman, 1963) and environmental influences like deprivation of nurturance, lack of social and linguistic stimulation, physical and psychological abuse and neglect are all considered to be significant influences (Zigler & Hodapp, 1986.)

Reasoning: From Theories of Social Deprivation to Metacognition

The impact of a diminished social environment on the coping skills of people with learning disabilities has been raised by a number of different authors (see Zigler 1961, 1962, Vygotsky, 1978, 1987 and Nezu et al, 1994). It is considered a major obstacle which undermines the opportunity for people with learning disabilities to achieve their potential.

In the 1930s, Vygotsky, a Russian Psychologist, foreshadowed later socio-cultural formulations of learning disability by emphasizing that society, by responding to children labelled as

learning disabled by isolating them from mainstream society, would compound their disability. Vygotsky (1987) argued that learning to think in the abstract was crucial for children as this capacity enhanced intellectual skills generally, and specifically, improved the ability to think flexibly. He viewed the practice of educating children with learning disabilities outside the mainstream, with same ability peers, as fundamentally flawed, because it isolated the child and deprived them of the *social experiences they needed for adequate social and cognitive development*. The result was 'rigidity' in thinking and lowered motivation. Motivation for Vygotsky (1978) was a central issue; it was, he believed, socially produced, socially internalized and socially realized. Therefore deprivation of social experiences in a very broad sense, prevented the child with learning disabilities from achieving their intellectual potential. They were denied the social experiences necessary for the development of flexible thinking and the 'affective' motivation required.

Consequently, according to this hypothesis, the child with learning disabilities becomes reliant on external cues (predominantly other people) to guide and regulate their behaviour, rather than developing this internally. Later, Luria (1959) hypothesized that the internal mechanism mediating this process was speech. He believed that the central problem for people with learning disabilities was that their 'internal speech' had never developed sufficiently to guide their own behaviour. He used a series of experiments to demonstrate how

young children increasingly use language to develop more complex control over their behaviour. The language and it's impelling qualities initially come from the child's caretaker, but gradually become internalized, covert and taken over by the child.

The failure to establish the internalization processes described by Vygotsky and Luria would render the individual relatively dependent on others, and limited in their ability to make sense of themselves or their environments.

The ideas of Vygotsky and Luria could be considered to be alluding to what we now refer to as "executive function", that is, the brain's cognitive 'supervisor'. Indeed Luria (1966) subsequently developed his ideas to argue that the brain's frontal lobes contained a system for the programming, regulation and verification of activity. (This argument was based on work with patients who had frontal lobe disorders.) Shallice (1988) calls this a Supervisory Attentional System (SAS), and describes the explicit role the SAS plays in co-ordinating the sequences of activity required to carry out tasks that are complex or novel. Once a task has been repeated a number of times it becomes relatively automatic, and may require little if any input from the SAS. This phenomena could be conceptualized as being carried out via an internalized Socratic dialogue (eg. "to achieve X, what do I need to do first? I need to do Y, but if I haven't done

P will Y work?").

To carry this process out effectively we need to have some understanding of the fact that we can control what we do by talking to ourselves, Williams & Jones (1996) refer to this phenomena as having 'metacognition'.

Nezu et al (1991) suggest that the ability to solve problems is characterized by a general coping strategy in which the individual thinks of a range of possible ways in which to respond to stressful or problematic situations. To come up with these alternatives, the individual needs to be able to ask themself appropriate questions. It is the absence of asking appropriate questions that Williams & Jones (1997) suggest is responsible for the poor transfer of skills usually found following the training of someone with learning disabilities on a specific task. For example Castles & Glass (1986) found social and interpersonal problem solving training lead to improvements on role-play tests of social skills in mild and moderately learning disabled adults. The moderate group showed improvements on problem solving measures relative to their control group. However these treatment gains failed to generalize to an untrained role-play situation (near transfer).

Traditional self instruction training (SIT) programmes with

people with learning disability emphasize the learning of specific instructions by verbal rehearsal, to enable the cognitive control required to carry out a specific task. Learning by this method was compared to a 'metacognitively' enhanced programme where the participants were encouraged to discover solutions via a problem solving method which encouraged metacognitive processing (Williams, Ellis & Jones, 1996). The task involved being trained to be effective speakers, who would be able to tell a listener how to find a series of target referents by making selective comparisons on a map (for example "from the house to the tree, *the evergreen not the apple tree*".) In the metacognitive condition participants were engaged in an active dialogue with an instructor who encouraged them to ask questions of themselves rather than rehearse instructions as in the SIT condition. A hierarchy of questions and statements were used to guide the participants to 'discover' task demands, appropriate strategic intent, then to implement the strategies and monitor performance (rather like an externalized SAS). Only the group who had received metacognitive training requested selective comparison appropriately when asked to be listeners (rather than speakers) on a new map reading task. That is, they showed transfer of skills between topographically different tasks - or evidence of 'far transfer' (Williams & Jones, 1997).

This approach potentially addresses the issue of agency for people with learning disabilities, by helping them to re-attribute control intrinsically, and making them active and

"skilled" agents in this process.

If the high rates of psychopathology in people with learning disabilities (reported below), are connected with these issues of poor problem solving, then this type of skills training could have positive pay-offs in terms of lowering levels of associated distress, and perhaps improve self esteem and adaptive functioning, and potentially, the development or maintenance of psychiatric disturbance. In a review of outpatient psychotherapy research, Nezu & Nezu (1994) support approaches that emphasize the role of self regulation, like metacognitive training, as one of the most promising to date.

Rates of Psychopathology

The research literature shows evidence of relatively high rates of psychopathology in children, adolescents and adults with learning disabilities. The Isle of Wight Study (Rutter et al 1976) found that children with learning disabilities aged 9-11 years showed a rate of 30-40% compared to their non-disabled peers of whom 6-7% displayed psychopathology . 57% of mildly learning disabled adolescents aged 13-17 and 67% of those with severe learning disabilities were found to show a 'handicapping psychiatric condition' (Gillberg et al, 1986). Examples of these were psychotic behaviour, depression, conduct disorder, emotional and psychosomatic disorders. Gath and Gumley (1986) found rates

of 38% in children with Downs Syndrome aged 6-17, and a slightly higher rate of 49% in a group of young people with no established cause. Iverson and Fox (1989) found a 50% rate amongst young people with Learning disabilities aged up 21 years old. More recently, Einfeld and Tonge (1996) reported 40.7% of their sample to show severe emotional and behaviourial disorders, and as their cut-off for diagnosis was 'severe' this is likely to represent only the more extreme examples of mental illness. So there is clear evidence of high rates of psychopathology throughout the age range of people with learning disabilities.

However, these reported rates may still be an underestimate. Reiss et al (1982) showed that mental health professionals tended to rate emotional problems lower on a scale of psychopathology when the individual was known to have learning disabilities. This suggests that mental health professionals may unwittingly attribute emotional difficulties to the learning disability rather than as evidence of the presence of psychopathology. If this assumption is correct it suggests that the presence of indications of psychopathology are not taken as seriously as they should be. Consequently, psychiatric conditions may deteriorate to the point where they are quite severe before they are acknowledged and treated.

The existence of such high rates has important implications for the caring professions, because it indicates that the number of

people with learning disabilities who are likely to require assistance with their behaviourial/emotional difficulties is considerable. The need to provide effective out-patient based psychotherapies in the community is increasing (Nezu and Nezu, 1994) because the community is now the place where people with learning disabilities are accommodated. Consequently the need for the services of clinical psychologists, who are potentially the most appropriately trained professionals to provide comprehensive assessments is also rising. They can draw from a range of therapeutic interventions, and tailor them around individual problems and the context in which they take place.

In order to provide effective interventions however, there is a need to establish some understanding of why the rates of psychopathology amongst people with learning disabilities should be so high.

Psychopathology and social experience

Matson and Sevin (1994) argue that the etiology of dual diagnosis - the co-morbidity of mental health problems and learning disability - has been a neglected area of research, and hypothesize that a combination of biological and social factors may be responsible.

Bregman & Hodapp (1991) suggest that even those individuals with mild or borderline IQs, who tend not to have an obvious cause for their disability, may in fact have more chromosomal abnormalities, nutritional deficiencies and rare genetic conditions than normal. However, the sheer scale and scope of negative social conditions that tend to surround people with learning disabilities are likely to make a significant contribution to the development of psychopathology. As Reiss & Benson (1984) note, many of the emotional problems seen in these individuals might quite reasonably be expected of people with no disability, were they exposed to the same negative social conditions for long periods of time. It is the more socially oriented explanations that will now be considered.

Society's attitude towards people with learning disabilities (and those with chronic mental illness) has traditionally been stigmatizing and rejecting, and arguably enabled the practice of caring for these people in large residential institutions located outside towns and away from people in the first instance. The philosophy of 'normalization' (Wolfensberger 1972) has rendered such attitudes as explicitly unacceptable, and alongside financial considerations, encouraged the move to accommodating people with learning disabilities within the community. The reality for people with learning disabilities is that their opportunities for meaningful lives within the community are still blighted by their continued low status in a society which undermines their ability to belong.

Indeed, Sinason (1992) argues that people with learning disabilities have to endure the awareness of a 'death wish' towards them from society. This is implicit in the practice of offering pre-natal screening for fetal abnormalities and termination of pregnancy if detected. There is no question that giving birth to a child with learning disabilities will be regarded as a negative and aversive experience by many.

Reiss & Benson (1984) described how many patients with mild learning disabilities and emotional disturbance they worked with were highly aware of their negative social conditions and were extremely frustrated by them. For example, the very title of mental retardation (still used in the USA) or mental handicap or intellectually impaired, they argue, amounts to a permanent label of incompetence in respect of managing their own affairs. The tendency of families and others to treat People with Learning Disability like children long after they had become adults, in other words being infantalized, is another common problem. Experiences of being rejected and ridiculed after making a mistake or exhibiting 'different' behaviour, and victimization (being subject to physical abuse, robbery and generally being taken advantage of) are all unpleasant experiences that People with Learning Disability are more vulnerable to and suffer more (Reiss & Benson 1984).

Szivos and Travers (1988) explored the issue of how People with Learning Disability come to terms with their condition and awareness of the stigma with which it is regarded by society. They argue that the emphasis on 'passing for normal' often implicit in the service based interpretation of normalization theory, is quite unhelpful. Because while this philosophy encourages an "existence as close to normal as possible" (Bank-Mikkelsen, 1980) in reality this often amounts to trying to make People with Learning Disability behave as if they were normal, and in the process denies their real identities and difficulties.

When Szivos & Griffiths (1990) tried to run a group for People with Learning Disability to help them come to terms with their handicaps and identity, (with a view to developing a more positive identity), they found the participants could barely acknowledge the fact that they had a learning disability at all. It was very difficult for the group to discuss this issue, and some participants still insisted on referring to their problems as 'shyness' at the end of the intervention. Some participants had become more "accepting of their difficulties", but the aim of developing a more positive identity had not really been achieved. Interestingly, the facilitators of this group also found it very difficult to address the issue of the learning disability initially and had to be prompted to do so. I have experienced this phenomena too, that it feels extremely difficult, almost cruel, to make explicit reference to the existence of the learning disability to someone who has one.

Sinason (1992) argued that many of the young people with learning disabilities she saw, often following a referral for challenging behaviour' of some sort (a euphemism for violent, self injurious, difficult to manage and distressing displays of behaviour) had developed a 'secondary handicap'. By this she meant the existence of a second layer of disability which had been developed to protect themselves in response to traumatic experiences. By adopting an identity with an even greater handicap than they actually had, these individuals could 'cushion' themselves from a real awareness of the implications of their difficulties, and from the demands other people made of them. While Sinason (1986) postulated the secondary handicap in relation to specific traumatic experiences like sexual and physical abuse, this concept probably has much wider applicability to the learning disabled population, and may help to explain the phenomena of possible underachievement observed.

When the adverse conditions in which many people with learning disability live are considered, it seems likely that some form of defence would need to be adopted.

Research relating to emotional factors and problem solving

Reiss & Benson (1984) found evidence of a significant relationship between low levels of social support and depression in a group of adults with mild learning disabilities and

emotional disturbance. Helsel and Matson (1988) found that higher rates of depression shown by participants' self report, and by informants, were correlated with lower levels of social skills.

Benson & Ivins (1992) found that in a sample of 130 adults living in the community, people who reported low levels of self concept also reported higher levels of depression. Informant ratings of self concept were negatively correlated with ratings of anger and depression. Reiss & Rojahn (1993) looked at the relationship between aggression and depression in adults, adolescents and children with learning disabilities. They found that aggression was strongly associated with levels of depression. These studies suggest that low levels of social support, low self concept and poor social skills are all associated with increased incidence of depression.

In a study of self-reports by adolescents with and without learning disability, on measures of depression, general psychopathology and social skills, Manikam et al (1995) found that adolescents with learning disability reported more depression and general psychopathology symptoms. Higher levels of depression and lower levels of verbal IQ were associated with average and below average levels of adaptive behaviour. This suggests that adaptive skills ameliorated the impact of lower verbal IQ and depression.

Smith (1986) compared the interpersonal problem solving skills of a group of mildly learning disabled subjects (mean age 12.9 years), and two non-disabled groups, one matched for mental age (MA) and the other for chronological age. A series of black and white line drawing were used to depict the scenarios. The learning disabled group and their MA controls showed similarities both in the type and number of strategies used. The CA matched group exhibited a wider range of problem solving strategies and made greater use of them, which was thought to reflect higher levels of social understanding. This suggests that the learning disabled adolescents were operating at a developmentally less mature stage.

Generally evidence suggests that people with learning disabilities do not problem solve as effectively as their non-disabled peers. For example, Williams (1991) compared the problem solving abilities of learning disabled and non learning disabled students through presenting social problems in reading text. Poorer problem solving was associated with a tendency to make more importations (incorporating extraneous information) and more implausible importations. Students with learning disabilities were more prone to making these errors. Very poor problem solving was connected with a tendency to confound the textual problem with personal opinions and feelings.

Wehmeyer & Kelchner (1994) looked at the relationship between

interpersonal problem solving ability and self determination in a group of people with learning disability (aged between 17 and 72). The authors hypothesized that self determination (measured by a self-efficacy scale and self description question), and interpersonal problem solving skills would be linked. The Means End Problem Solving (MEPs) technique (Platt & Spivack, 1989) was used. The MEPs are story items portraying situations where a need is introduced at the beginning of the story and satisfied at the end. The respondent is required to complete the story by filling in the events that might have occurred to fulfil the need. Weymeyer & Kelchner (1994) did not find evidence of a significant relationship between the measures. The participants were reported to have generated few relevant means and to employ 'limited' means (by which I assume the authors are making reference to a lack of elaboration, although this is not clear.)

There does not appear to be any direct evidence of a causative relationship between emotional distress and problem solving skills. Nezu et al (1991) provide some indirect evidence through work carried out with dually diagnosed adults. They found that a combination of assertiveness and problem solving training led to an improvement in levels of distress reported by the participants, and by their carers ratings of adaptive functioning. Healey & Masterpasqua (1992) however found that interpersonal cognitive problem solving skills distinguished between teacher ratings of mildly learning disabled children who were adjusted or non-adjusted. They used a pre-school

interpersonal problem solving measure (Shure & Spivack, 1974) and the Means End Problem Solving measures (described above). Adjusted children generated a larger number of relevant solution to common problems, and showed a higher ratio of aggressive solutions.

Literature regarding levels of distress in non-learning disabled adolescents also suggests a relationship. Frauenknecht et al (1996) found in a population of non-learning disabled adolescents that as problem solving skills increase, the intensity of distress and frequency of personal problems decreases. Significantly higher levels of depression and learned helplessness were reported by Reynolds & Miller (1985) when they compared the self reports of mildly learning disabled adolescents and non-disabled adolescents. The authors suggested that the learning disabled adolescents had endured repeated experiences of failure in the classroom, which had led to the development of assumptions about their failures being due to stable internal characteristics being made. A combination of lower coping ability and the additional stress of negative social conditions they hypothesized, exacerbated the vulnerability of these young people to learned helplessness and depression.

The theory of Learned Helplessness (Abrahamson, Seligman & Teasdale, 1978) has its roots in the attributions people make to explain the causes of events that occur in their lives. Repeated

experiences of failure that are attributed to causes outside the individual's control lead to the development of learned helplessness. People who evidence learned helplessness tend to make attributions to internal, stable and global causes. Ability is a good example, if one attributes failure at a task to insufficient ability this is an internal and stable attribution (ie. a permanent state) that would apply globally (ie. to everything that required some ability). Consequently the argument goes, there would be no point trying to succeed on a task requiring ability for a person who makes these sort of attributions, because they have learned that they are unable to change this state of affairs. In this way learned helplessness contributes to the development of depression (Peterson & Seligman, 1984). This type of explanation would suggest that people with learning disability would be vulnerable to develop learned helplessness, by having less ability to cope and repeated experiences of failure.

Social problem solving in non-disabled adolescents

The ability to manage social problems per se is affected by the way the individual reasons about other people and social situations. Resolving problematic social situations requires interpersonal understanding and means-end problem solving ability (Pelegrini 1985). The problem solving component is thought to involve the ability to plan and co-ordinate a series of specific steps to reach a social goal, and to be aware of potential

obstacles and alternative means to the goal. Based on an object relations premise, Crick & Dodge (1994) suggest that the interpersonal understanding component is mediated by the child's expectations of social experiences, based on an internal schema of early relationship experiences.

There is some evidence for a developmental change in the type of solutions favoured by children and young people in resolving hypothetical social problems. Socially competent young children tend to generate assertive verbal solutions (Rabiner et al 1990), while adolescents accepted by their peers tend to generate bargaining solutions. Adolescents with social difficulties tend to generate assertive verbal solutions to hypothetical social problems (Lochman et al 1993), suggesting that they may be experiencing a developmental lag in their ability to resolve interpersonal conflicts.

A number of studies have shown poor social problem solving skills to be associated with maladjustment in adolescence. Lenhart & Rabiner (1995) showed that young people with poorer social problem solving skills reported more behaviourial problems, were rated by their teachers as more aggressive and less competent in behaviourial interactions. Adolescents who had attempted suicide showed poorer problem solving skills in comparison to groups of normal and psychiatric controls (Sadowski & Kelley 1993).

A study by Davilla et al (1996) linked poorer problem solving ability with lower levels of self worth in a group of young women making the transition to adulthood. Marton et al (1993) found depressed adolescents to have more negative self concepts and less social confidence in comparison to a non-depressed and psychiatric control group. So there is evidence of poorer social problem solving skills being linked with social and behaviourial difficulties, and a link between lower levels of self esteem and depression.

Developmental theories of Adolescence

Adolescence represents a time of enormous change. Psychologically there is much to accommodate and adjust to, the physical changes typical of puberty, the impact of changing hormone levels, increasing expectations from surrounding adults, and the shift in emphasis from relationships within the family to those with peers. Havinghurst (1972) described the following adolescent developmental tasks, which if successfully achieved lead to happiness and success in later tasks:-

* achieving new and more mature relations with peers of both sexes
* achieving a masculine or feminine role
* accepting one's physique and using the body effectively
* achieving emotional independence of parents and other adults
* preparing for marriage and family life

* preparing for an economic career
* developing an ideology (a set of values and an ethical system that guide behaviour)
* desiring and achieving socially responsible behaviour.

Erikson (1959) wrote an influential theory of psychosocial development, in which he describes 8 stages. These span life from infancy to old age. Each stage is characterized by a crisis in which a core theme needs to be resolved for development to continue successfully. Effective resolution leads to the development of a new 'virtue'. Two stages of Erikson's theory, the 4th and 5th are relevant here.

Between about the ages of 10-14 the stage is Industry versus Inferiority. The child who successfully negotiates this stage learns to use the physical and intellectual 'tools' of their society. Being aware that one can learn these things (industry) is a key theme. There is also a risk of the child developing a sense of inadequacy and inferiority during this period if previous conflicts have not been sufficiently resolved, or, if the child is *unable to learn* the skills needed for effective functioning in their society (Sugarman, 1986). The second relevant stage is around the age of 14-20, Identity versus Role Confusion. Erikson (1980) describes the period of adolescence as 'psychological moratorium' where the young person has the very significant task of 'finding' him or herself through experimentation with occupational, ideological, social and sexual

roles. This identify formation also involves the adolescent engaging in a gradual emotional separation and detachment from parents. The risk during this period is identity crisis and the development of maladaptive behaviour patterns.

Adolescents with learning disability are unlikely to achieve many of the developmental tasks described by Havinghurst (1972). They may have been unable to successfully resolve the stages described by Erikson (1980). They are unlikely to have learnt the specific skills they need to function successfully in society described in the industry vs inferiority stage. Their task of 'finding themselves' in the identity vs role confusion stage may be undermined by feelings of inadequacy, and limitations in the roles and niches available to them. It is unclear how many of these key developmental stages or tasks have been or could be achieved by the adolescent with learning disability. It is also uncertain how serious the ramifications of these limitations would be, although both Havinghurst and Erikson suggest that unhappiness and maladjustment could result.

For all young people the transitions of adolescence are accompanied by wide variation in individual ability to adapt and in parental attitudes. However, for young people with learning disability only those with mild intellectual disability are likely to have the potential to achieve the financial and emotional independence that would be expected of non-disabled

adolescents.

There is generally greater uncertainty about what the future holds for these young people. This period could make particularly onerous demands of young people with learning disabilities who will have less skills to bring to bear, and less vocational opportunities to select from.

Research has shown that this is a time when high levels of anxiety may be experienced (Cohen 1986), which may be reflecting concern about being able to cope with this transition and the decisions involved. For example, Dollinger et al (1988) found that young people with learning difficulties (mean age=17) had significant rates of sleep disturbance. When analysed with the responses of a fear questionnaire, anxiety about academic performance, being alone and negative interpersonal experiences were all significantly correlated with sleep problems.

The role of parents

Parental attitudes impact on their children and their futures. This effect is likely to be more acute for young people with learning disabilities because their parents will maintain more control than is usually the case. The potential for infantilization of these young people is great.

Dyson (1993) has shown that families of children with disabilities generally experience greater levels of stress than other families, and continue to experience periodic crises of stress and sorrow, particularly in relation to temporal events that normally signify maturation and development (Wickler et al 1981).

The parents of young people with learning disability are in the difficult position of trying to evaluate what their children will and won't be capable of. Some parents manage this phase impressively and enable their children to manage exceedingly well. For other families this process is less successful. Parents or carers may become over-protective and restricting rather than negotiate the anxiety provoking job of helping to evaluate strengths and weaknesses, and allow the young person to take trial and error risks. In the desire to protect their children, the young people may be encouraged to stay dependent by their parents or carers.

SUMMARY

High rates of psychopathology exist in the learning disabled population as a whole. Biological factors may act as a predisposing factor, but there are also major emotional, social and cognitive influences and disadvantages that need to be taken into account. Little research exists concerning the personal

experiences of young people with learning disabilities, and specifically their experiences of adolescence. As this represents a potentially challenging time for all young people, being able to identify those who are struggling to cope may enable the prevention of serious difficulties. The period of adolescence could represent a critical period for young people with learning disabilities.

The Experimental Hypotheses

1. The purpose of this study is to establish if a relationship exists between social problem solving ability in relation to transitional issues, and mood in adolescents who have mild or moderate learning disabilities.

2. If a relationship does exist, it is hypothesized that lower problem solving skills will be associated with higher levels of emotional distress.

METHOD

Design

The study used a cross-sectional method, obtaining measures from each participant on one occasion only. The data provided by the seven measures utilized was designed to provide both descriptive data about the incidence and prevalence of mood and problem

solving skills, and to provide data to enable analysis of the associations (correlations and covariance) between the measures.

Inclusion criteria

Participants were male and female aged between 16 and 24 years of age who had learning disabilities (mental handicap). This relatively mature adolescent range was included due to the assumption of extension in the adolescent period in young people with learning disability. They were required to be able to use a minimum of 3 or 4 word sentences in English. People with mild sensory or physical impairments were included.

Exclusion criteria

The presence of severe and enduring mental health problems, for example psychotic symptoms or severe depression.

Participants

18 young women and 24 young men participated in the study, making a total of 42. Their ages ranged over an eight year span, from 16 to 24 years. The mean age was 17.7 years and Standard Deviation = 2.85.

74% (31) subjects attended school full-time, the remaining 26% (11) had left school. Of those who had left school 7% (3) were attending college courses and 19% (8) were unemployed. 67% (28) attended a secondary school for young people with mild or moderate learning disabilities located in a London suburb, and 7% (3) a school for severe learning disabilities. Of the three participants who were at college, two attended a life skills course within a mainstream environment in central London, and one a residential educational unit for people with epilepsy.

Concurrent diagnoses

One participant was known to be Autistic, one had experienced a psychiatric breakdown but had recovered, and a third had severe epilepsy and attentional difficulties.

Recruitment

People were recruited initially from registers kept in three London boroughs for the purpose of planning and researching services for people with learning disabilities. In order to maintain confidentiality, potential subjects from this list were approached through the post. The number who indicated their willingness to participate from this approach was extremely low. This necessitated widening the sources of recruitment and including participants who had more pronounced learning

disabilities.

Consequently a number of other sources were approached for example local MENCAP groups, community teams and local schools and colleges. Accessing the organizations required dealing with considerable bureaucracy, and despite attending many meetings, response rates continued to be very poor. These contacts in total yielded 14 participants out of a possible 70 who were suitable.

The most fruitful sources of participants were two schools whose headteachers were sympathetic about the research. One school (for children with Severe Learning Disabilities) were able to provide three children with sufficient language to participate. The other school catered for children with mild and moderate learning disabilities. This school produced 28 suitable participants. (The reasons that may lie behind the problems of recruitment are considered in the discussion.)

MATERIALS

The Transitional Social Problem Vignettes

Finding appropriate scales for people with learning disability

The increasing interest in the experience of life for people with learning disabilities in the community has led to the discovery

that relatively little is known about their emotional lives (Benson & Ivins 1992). One contributory factor to this gap in knowledge is the lack of appropriate instruments to measure the emotional states of this population, particularly from self report. Existing questionnaires generally use a vocabulary that is too complex, and response formats that yield low reliability (see Lindsay & Michie, 1988 below). Items within conventional measures tend to refer to situations which simply do not arise in the day to day lives of people with learning disabilities (Bramston & Bostock 1994), and require a familiarity with concepts (like degrees of anxiety) that make it impossible to use many existing instruments. When scales are adapted to take into account these difficulties, people with learning disabilities can report on their emotions in a consistent way. For example, a group of adults with mild and moderate learning disabilities were found to report on their emotions in a manner which indicated statistically significant convergent validity (Lindsay et al 1994) using the following measures. The adapted Zung Anxiety Scale (see below), an adapted version of the Zung Depression Inventory, the General Health Questionnaire and the Eysenck-Withers Personality Test).

Construction of the scale

As a measure of social problem solving in relation to adolescent issues was not available, one needed to be constructed. Existing measures of general problem solving or of inter-personal problem

solving skills could have been used but would not have addressed the issues of adolescent transition. Constructing such a measure also meant that the way these issues affect young people with learning disabilities *differently* from their non-disabled peers could potentially be evaluated. This meant that the tendency of the existing scales to incorporate items that have little relevance to the lives of people with learning disabilities could be avoided. To illustrate this difference, one of the resulting Vignettes concerned a 19 year old whose parents objected to her travelling alone (see Appendix A). This scenario would be unlikely to exist in a traditional British family because, by 19, non-disabled young people usually travel independently.

The development of the Vignettes

A 'pool' of stories were constructed in an attempt to identify and focus on key areas in the transition from adolescence to adulthood. The ideas for the stories came from a variety of sources. Some were based on observations of issues that arose for young people with learning disabilities during the clinical placements. The issue of parents objecting to independent travel for example was identified by teachers of young people with learning disability as a source of difficulty for some pupils. Other ideas were based on areas of transition that all young people have to make. Modifications were then made to incorporate the kind of complications that could exist for a young person with learning disabilities.

The subjects of the stories were given ages which would conventionally indicate that they were above the average age when these issues might be confronted. The stories were deliberately phrased in the second person to prevent the participants from feeling inhibited about responding. As phrasing in the first person could have been experienced as being 'put on the spot' and over-personal. In order to check that the responses participants made were not completely different from the way they would problem solve in the hypothetical situations, after responding to the Vignettes, the participants were asked if they would do the same sort of thing they had advised people in the stories to do. (The vast majority said yes).

Refinement of the pool of stories came from two Clinical Psychologists, (one of whom specialized in work with people with learning disabilities). Teachers and Social Workers who specialized in working with people with learning disabilities were also consulted and asked for their views on the relevance of the now 6 shortlisted stories. Everyone agreed that these six Vignettes represented areas that were, or might be, problematic for adolescents with learning disabilities. The areas that were addressed in the final version of the stories were:-

* ability to act independently in the face of parental over-protection (vignette 1)
* dealing with potentially exploitative people (vignette 2)

* dealing with ambivalent situations (wanting to do something and feeling anxious about it) (vignette 5)
* developing relationships (vignette 6)
* sexual relationships (vignette 3)
* leaving home (vignette 4)

The Vignettes used can be found at Appendix A.

Modification of the responses required

Originally, after each Vignette had been read the participant was to be asked the following set of questions : *"what is the problem"; "think of as many ideas to solve the problem as you can"; "what are the positive and negative consequences of each idea"; "which idea do you thinks will solve the problem"* (taken from Nezu et al 1991). This procedure was too demanding for some participants (who did not appear to fully understand what positive and negative consequences were for example). It was laborious to administer, potentially protracting each vignette response to 5-10 minutes (within an already long battery of tests), and appeared to annoy some participants who became dysphoric (fed-up) as the questions went on. As this much detail was not particularly important the post-Vignette probing was modified. Instead each participant was asked *"What should (the subject of the story)..do?", "any other ideas?", "what is the problem in the story"*. If the participant had generated more than one solution they were additionally asked *"which is the best*

idea". This procedure worked much better.

The question "What is the problem in that story" was included as a comprehension check. However it proved rather unreliable. Some participants were able to identify the problem correctly and give reasonable solutions, but other were unable to verbalize the problem, sometimes despite having given a sensible solution to the vignette.

Devising a Scoring method for the vignettes

An 'Ideal' age appropriate solution to each transitional problem was constructed. Each vignette had 5 points potentially available, with higher scores reflecting more proficient problem solving skills. Some points were made available if part of the problem had been resolved. For example, for Vignette one (see appendix A), 2 points were scored if a solution to get to the pictures was specified, but the full 5 points were only allocated if the participant also resolved the issue of travelling independently, rather than acquiescing and travelling with someone else.

Where a participant verbalized a number of possible solutions, they were awarded the maximum points they could be eligible for.

If they had produced the ideal solution but had not specified it as their best idea they still earned points for it. Participants' responses were deemed acceptable if they answered in the first person rather than using the name of the subject of the story. The raters who scored the Vignettes were asked to disregard any response from a participant following a prompt from the interviewer that sounded remotely directive. (Some prompting had been required to keep participants on task).

Transcription

The responses of the participants who had consented to being audio-taped were transcribed word-for-word, (as were the interviewer's). The responses of participants who had objected to being audio-taped were written by hand as accurately as possible, as were any comments made by the interviewer.

Inter-rater agreement

Two raters initially scored all the participants responses. A third rater then scored the responses to check for reliability. At first the initial level of agreement between the first two and third rater was unacceptably low necessitating a re-assessment of the scoring by the original criteria. This was re-specified in considerable detail (details can be found at Appendix B). All the participants responses were then re-scored according to this

more rigorous and consistent criteria and resulted in a much improved rate of agreement of 93% between the first two and the third rater, and represents an acceptable level of inter-rater reliability (Barker et al 1994). The source of remaining disagreement was in connection with participants responses to vignette 5. The raters had managed to achieve to 100% agreement on the other 5 vignettes.

Cognitive Functioning

To obtain an indication of each participant's level of cognitive functioning a verbal and non-verbal measure was taken. This was to enable the variability of IQs to be taken into account statistically.

Ravens Matrices

Ravens Coloured Progressive Matrices (1976) a well established measure was used to estimate non-verbal intelligence. It assesses the subject's ability to match designs analogically on a progressively difficult scale. The Matrices come in the form of a book. The individual items are presented as a patterned rectangle with a piece cut out. The respondent is required to indicate which of the six displayed alternatives is the correct piece to fit the missing part (by pointing, or by naming the number of the piece) . All items are administered to all

subjects and the administrator records the responses. The ceiling level of performance reflects the normal cognitive functioning of a 12 year old.

The British Picture Vocabulary Scale

The British Picture Vocabulary Scale, Short Form (Dunn, Dunn, Whetton & Pintillie, 1983) was used to provide an estimate of receptive verbal ability. The British Picture Vocabulary Scale (BPVS) presents the participant with 'plates' in which four objects or actions are depicted in line drawings. They are then asked to indicate (by pointing or reporting the number of the picture) which of the four best shows the word the interviewer says. For example (Item 13), the participant is required to show the word "artist". In the first of the four drawings; a man is depicted on a bench with a dog; in the second, a fairy with a wand is depicted; in the third, a man painting a picture on an easel with a model posing for him is depicted; and in the final picture, a female receptionist with head-phones on, working a switch board is depicted. In this way receptive verbal vocabulary from the age of 2 years through to adult years can be assessed. The scale uses basal and ceiling rules making the traditional split-half measure of internal reliability inappropriate. This is because early items which are assumed correct and later items which are assumed incorrect would distort the inter-item correlations. Instead, comparison of odd and even items that were actually attempted by participants, yielded

reliabilities in the 0.75 to 0.86 range. Dunn et al (1983) suggest one of the scale's strengths is that it can assess participants regardless of defects in pronunciation. The ability of the BPVS to measure vocabulary in comparison to other scales is not reported by the authors, although most other tests use a combination of receptive and expressive vocabulary making direct comparison difficult. Dunn et al (1983) suggest that the strong correlations found between vocabulary and IQ in the British Ability Scales (Elliott 1983) indicate that "vocabulary is one of the most important contributors to measures of intelligence". It is a drawback however that Dunn et al (1982) do not report comparisons of BPVS scores with other measures of intelligence.

Measures of Mood

The Zung Anxiety Scale

The Zung Anxiety Scale (Zung 1971) is a 20 item self-rating scale which enquires about the existence and intensity of anxiety symptoms. Intensity is assessed by the responder indicating whether the symptom is present *'Most of the time', 'A good part of the time', 'Some of the time', 'None or a little of the time'*. Higher scores indicate higher levels of anxiety. The scoring and associated wording is reversed on five items. The scale was adapted by Lindsay & Michie (1988) for use with people with learning disabilities. They found the original style of responding to the scale unsatisfactory because the split-half

reliability coefficient was unacceptably low, and produced response sets from some participants in the adaptation sample. The response format was eventually modified to a *"Yes" or "No"* to indicate the presence or absence of a symptom. This was found to be the most reliable way of recording responses. Lindsay & Michie (1988) reported a 0.83 correlation between a yes/no and no/yes response format administered three months apart. Internal reliability was adequate with a split-half reliability coefficient of 0.69. Scores on the modified version of the scale range between 0 and 1. With higher scores reflecting anxiety. Four items use reverse scoring (eg. a "yes" response indicates the absence of anxiety). Some of the items used were "*Do your arms and legs shake and tremble?", "Can you feel your heart beating fast?."* Lindsay & Michie (1988) provide alternative wording for some questions in the adapted version of the scale to aid comprehension (*"Do you have fainting spells or feel like it?"* can be re-phrased as *"Do you feel you are going to fall down because you are weak and dizzy?"*). The adapted version of the scale was used in the present study, and some of the alternative wording was useful for some participants, but some items were still difficult for participants to understand despite the alternative wording.

The Birleson Depression Inventory

The Birleson Depressive Self-Rating Scale (Birleson 1981) is a 37 item questionnaire developed for 7-12 year old children. It

has three response categories *'Most of the time', 'Sometimes', 'Never'*. These are scored 0, 1 or 2 with the higher score reflecting depression. Some of the scale items are scored positively, while others are scored negatively to indicate the presence of depression. A modified 18-item version of the scale was developed by Birleson (1981). It was found to discriminate between depressed and control groups of children (using a cut-off score of 13/18). This version of the scale was found to have a test re-test reliability of r= 0.80 (Birleson 1981) showing a satisfactory degree of stability. (Individual items had correlations of between r= 0,65 and r= 0.95). The internal consistency, estimated by the split-half reliability coefficient was found to be 0.86. The 18-item version of the scale used in the present study has previously been used in research with adults with learning disabilities (Benson & Ivins (1992). A range of scores from 2-25, and mean of 10.79 were reported. Some of the items were *"I feel so sad I can hardly stand it", "I have lots of energy"*.

The Subjective Stress Scale - a measure of Stress

This Scale was originally devised by Bramston and Bostock (1994) to measure events in the lives of people with learning disabilities (PLD) which stressed them. Reasoning that the major changes to the models of service offered to PLD, such as residential care in the community, work in sheltered employment, brought with them a significant increase in the changes PLD had

to adapt to, and in the demands made of people with learning disabilities. Events typical in the lives of PLD were included after extensive consultation with a large group of individuals with Learning Disability and professionals involved in their care. The scale enables the user to quantify the frequency and intensity of daily hassles and major life stressors currently causing concern, (and to determine when might be an optimum time to move for example, according to the levels of stress reported by the participant.)

The scale has 31 items to which the respondent initially has to answer yes or no. Some of the items were *"Do you get to choose things that are important to you?", "Do people bully you or hit you?", "Do you get enough help when you want or need it?"*. Once a stressful experience has been indicated, the responder is required to show how stressful the experience felt on a 4 point Likert scale, 1 (a little stress) to 4 (a lot of stress). The Likert scale is supported by a visual aid representing stress levels in four 'buckets' which are correspondingly nearly empty to completely full.

Bramston and Bostock (1994) reported a Cronbach Alpha coefficient of 0.88 and a test-retest reliability over two weeks of 0.718 ($p<.001$). The scale has since been factored analysed (Bramston & Fogarty, 1995), indicating that people with learning disabilities are affected by the same major stress dimensions as

the general population. A validation factor analysis (Fogarty, Bramston & Cummins, 1996) using a new sample of people indicated three underlying factors accounted for the correlations amongst items. These were interpreted as 'General Worry', 'Negative Interpersonal Relations' and 'Coping' factors.

Social Reasoning

Three stories from the Social Reasoning Subtest of the British Ability Scale (Elliott et al 1983) were used to provide an independent measure of social reasoning ability. The BAS provides norms in performance for the scale from age 5:0 to 17:5. Responses are scored according to 4 developmental stages:-

0 Pre-reasoning (eg "I don't know" response)

1 Immediate consequences (eg. the subject describes a punishment or reward the person in the item should get)

2 Partial evaluation (eg. one side of the problem only has been grasped)

3 Full evaluation (an attempt is made to find reasons and explanations for both sides)

4 Generalised comment (a response indicating the child is able to see the problem as an example of general difficulties)

An item used was "John's ball was burst and it would not bounce, so John took Jane's new ball and played with that. What do you think will happen to John"....."Why". The BAS provides example responses from children to aid scoring. The three stories selected provided the following maximum number of points 2, 3 and

4. Contributing to a total possible score of 9.

PROCEDURE

The battery of measures took on average approximately one hour to administer, although individual times varied from 45 minutes to 2 hours. Participants were seen at various locations, at their homes, schools and colleges, wherever was convenient for them. The majority were seen at their schools.

Before the administration began a brief verbal account of the purpose of the study and the order of the measures was given, and the subject asked if they understood and felt comfortable with what I was asking them to do. (All the participants responded positively). Then the purpose of the consent form was explained before the contents of the form were read aloud. The participant was then asked to sign, and were reminded that they could stop at any time if they wanted to.

A verbal account of what was going to happen was also given to participants who had returned the consent form by post. The (already completed) consent form was shown to them and read aloud, and they too were asked if they were happy with what they were being asked to do.

Each measure (with the exception of the non-verbal Ravens Matrices) was read aloud to each respondent and their responses recorded. Some participants could read quite well, but others could not or had very limited levels of literacy, so reading aloud to everyone presented the only realistic way to control for the variability of reading ability.

The measures were taken in the same order for each participant, and were as follows:-

1. Ravens Matrices
2. British Picture Vocabulary Scale
3. Zung Anxiety Scale (Adapted)
4. Birleson Depression Inventory for Children
5. Subjective Stress Scale
6. Transitional Social Problem Solving Vignettes
7. The BAS Social Reasoning Subtest

By administering the more 'game like' measures first, Ravens Matrices and the British Picture Vocabulary Scale (Short-form), the participants were given an opportunity to adjust to the test situation and relax a little before the more personal questions contained in the questionnaires were asked. In between the various measures, and throughout the assessment, I talked informally with each participant in an attempt to put them at their ease. The need to do this varied considerably from

participant to participant.

Each participant was asked how they felt about their verbal responses to the Vignettes being audio-taped. Initially I had expected to tape everyone's responses but it became clear that some participants disliked their voices being taped. As this was likely to make them feel inhibited in their responses I wrote down their responses down instead.

At the end of the assessment the young people from the school where most of the participants were drawn from, were each given a pen and told this was to thank them for their help in the research.

R E S U L T S

Data from one subject was not used in the analysis because it was not comprehensive enough to use (this individual had felt unable to respond to many of the forced choice questions in the questionnaires). Two of the remaining 41 participants had not been administered the Social Reasoning Sub-test of the BAS, so mean group scores were substituted to enable their inclusion in the analysis.

Descriptive Statistics

Table 1

Means, Standard Deviations and Range of Scores for 41 participants on all measures

MEASURE	MEAN SCORE	STANDARD DEVIATION	RANGE (min-max)
Vignette	15.34	7.07	2 - 28
Subjective Stress Scale	25.54	15.40	0 - 62
Birleson Depression Inventory	8.10	4.19	0 - 20
Zung Anxiety Scale	4.59	3.57	0 - 16
Social Reasoning	3.88	1.71	0 - 7
British Picture Vocabulary Scale	17.41	4.21	9 - 24
Ravens Matrices	22.76	7.55	7 - 36

Higher Scores indicate higher levels of functioning on cognitive measures (Vignette, Social Reasoning, BPVS, Ravens Matrices), and increased distress on measures of mood (Subjective Stress Scale, Birleson Depression Inventory and Zung Anxiety scale).

British Picture Vocabulary Scale - Verbal IQ index

It can be seen (Table 1) above that the average BPVS score is 17, which represents the number of pictures correctly identified from a possible total of 32. This average raw score approximates to a normed age equivalent of 7:9 years (confidence interval of 6:10 to 8:9 years), and a percentile rank of <1. As standardized scores are not provided for older adolescents whose IQs fall below 61, providing an accurate estimate of the exact IQ level of this group is not possible. An estimate of the average verbal IQ of the whole group derived from the mean score of 17, (using the closest age interval available, 16:8 - 16:10) is equivalent an IQ of 42 which suggests functioning in the moderate learning

disabilities range. The highest scores obtained on the BPVS, of 24, corresponds to a normed chronological age of 12:2 (CI= 11:0 to 13:7, percentile rank = 6) which is equivalent to an IQ of about 61 points, and mild learning disability. The lowest scores in the range, of about 15 suggest functioning that is equivalent to the level of a normally developing 4:0 year old child (CI = 3:4 to 4:8, percentile rank will be <-1). The BPVS does not provide norms for this range, so an estimate of moderate to severe learning disabilities is probably appropriate.

Correlational Statistics

No significant relationships were found between any measure of mood and the transitional problem solving Vignettes (see table 2). A number of significant correlations were found between the Vignettes and other measures (see table 2 below).

Table 2

Pearson Correlation Matrix between Measures

	Vignette	Birleson	Zung	S.Stress	Soc Rsg	BPVS	Ravens
Vignette	1.0	-.1315	-.1014	-.1588	.6146***	.4990***	.3033*
Birleson		1.0	.4902***	.4664**	-.1451	-.3363*	-.2218
Zung			1.0	.5757***	-.0208	-.1196	-.0595
S.Stress				1.0	-.0783	-.2821	-.1003
Soc Rsg					1.0	.5256***	.4498**
BPVS						1.0	.5973***
Ravens							1.0

S.Stress=Subjective Stress Scale. Birleson=Birleson Depression Inventory. Zung=Zung anxiety scale. Soc Rsg=Social Reasoning. Ravens=Ravens Progressive matrices. BPVS=British Picture Vocabulary scale. Significance levels are denoted as follows, *=P.05, **=P.01 and ***=P.001.

Significant Correlations (table 2)

The Vignettes were positively correlated with the British Picture Vocabulary Scale (P=.001) suggesting that better performance on the vignettes was associated with higher verbal IQ. A positive correlation was found between increasing performance on the Vignettes and better Social Reasoning skills (P=.001).

Vignette is negatively correlated with the Subjective stress scale and the Birleson depression inventory (at P=.32 and P=.41 levels respectively). This indicates that there is a trend for better vignette scores to be related to lower levels of reported stress and depression.

There is also evidence of a trend towards higher levels of social reasoning being associated with lower levels of reported depression (at P=.36 level). Higher scores on Ravens matrices also corresponded to a trend of lower reported levels of depression (P=.16). A negative relationship was also evident between scores on the BPVS and reported levels of stress. This relationship was close to statistical significance at the P=.07 level. Generally these result indicate that participants with higher cognitive ability tended to report less mood disturbance.

The Subjective Stress Scale was found to have a significant positive correlation with the Birleson Depression Inventory (P=.002) and the Zung Anxiety Scale (P=.001). This suggests that subjective levels of stress increase alongside levels of depression and anxiety.

The British Picture Vocabulary Scale was found to have a negative relationship with levels of depression, suggesting that a larger vocabulary is associated with lower levels of depression (P=.03). Social Reasoning and Ravens Matrices were both positively correlated with the BPVS (P=.001), suggesting that better social reasoning skills and non-verbal IQ were associated with higher levels of verbal IQ.

A negative correlation was also found between age and vignette (r=-.4147, P=.01) indicating that older subjects achieved lower scores on the vignettes. Once the participants were divided by level of verbal IQ (see tables 5 and 6 below), it became clear that the participants who were older also tended to be allocated to the lower functioning group (with a mean age of 18.1 years versus 17.0 years in the higher functioning group). This suggests that the lower vignette scores may in fact be attributable to the presence of lower verbal IQ rather than the subjects being older.

THE VIGNETTES

Reliability of the vignettes

The internal reliability of responses to the individual vignettes was calculated to check if there were any vignettes that were acquiring very different responses from the others (see table 3 below). Cronbach's Alpha = 0.76 which represents an acceptable level of overall reliability.

Table 3: Reliability Analysis of the Vignettes

	Scale Mean if item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Vignette 1	12.0732	38.6695	.2734	.7781
Vignette 2	11.1951	32.1110	.5406	.7183
Vignette 3	12.1463	31.1780	.6359	.6935
Vignette 4	12.5610	31.2024	.4851	.7362
Vignette 5	12.2927	34.8622	.5007	.7308
Vignette 6	11.6829	29.2220	.6802	.6979

It can be seen (table 4) that the vignette that gained the highest problem solving score was No.2 the story about "Being taken advantage of", the next highest score was for "New relationship", followed by "Travelling independently", "Sexual relationships", "Job anxiety" and finally, "Leaving Home" which the participants scored lowest on.

Table 4: Sums, Means, SDs and Range of Problem Solving Scores for Individual Vignettes

VIGNETTE	Mean	Sum	SD	Range
1. Travelling Independently	2.32	95	1.37	0-5
2. Being Taken Advantage of	3.20	131	1.68	0-5
3. Sexual Relationships	2.24	92	1.61	0-5
4. Leaving Home	1.83	75	1.91	0-5
5. Job Anxiety	2.10	86	1.40	0-5
6. New Relationship	2.71	111	1.89	0-5

IQ Profiles and the allocation of participants to IQ groups

Examination of individual IQ scores showed enormous variance, ranging from 'borderline' levels to very low. However, because of the lack of standardization at the lower functioning, higher age range on the BPVS, these IQs could only be calculated to be *below* 41 points.

The extent of the IQ variability suggested it might be useful to divide the participants by level of cognitive functioning. Participants whose BPVS (verbal IQ) standard scores were 49 or below were allocated to one group (table 5 below), and those whose standard scores were 50 or above were allocated to a second group (table 6 below). The division of participants in this way is equivalent to allocation based on the presence of mild or moderate(to severe) learning disabilities.

Table 5

Mean scores of participants with verbal IQs of 49 or less (N=22)

VARIABLE NAME	MEAN SCORE
VIGNETTE	10.95
BIRLESEN DEPRESSION INVENTORY	8.95
SUBJECTIVE STRESS SCALE	29.36
ZUNG ANXIETY SCALE	5.23
SOCIAL REASONING	3.10
British Picture Vocabulary Scale *Standard Scores**	14.50
RAVENS PROGRESSIVE MATRICES	19.23
AGE	18.36

* It should be noted that BPVS *raw* scores and not standard scores are given here because of the lack of differentiation possible at the lower end of this scale.

Independent T tests carried out between the two groups revealed a significant difference in vignette scores. The higher functioning group having better vignette scores T=-4.02, P=.001 (two tailed).

No significant difference was found between the groups on the measures of mood. (Birlesen depression inventory T=1.43, P=.16, Zung anxiety scale T=1.27, P=.211). The Subjective stress scale did indicate a trend existed for the lower functioning group to report higher levels of stress T=1.78, P=.08.

Table 6

Mean scores of participants with verbal IQs of 50 or more (N=19)

VARIABLE NAME	MEAN SCORE
VIGNETTE	18.21
BIRLESEN DEPRESSION INVENTORY	7.11
SUBJECTIVE STRESS SCALE	21.11
ZUNG ANXIETY SCALE	3.84
SOCIAL REASONING	4.84
British Picture Vocabulary Scale *Standard Scores*[*]	20.79
RAVENS PROGRESSIVE MATRICES	26.84
AGE	17.0

* = It should be noted that BPVS raw scores and not standard scores are given here because of the lack of differentiation possible at the lower end of this scale.

When individual participants scores on the affective measures (Birlesen, Zung and Subjective stress scale) were added together to form as single 'mood' score, the associated T test approached significance, T=1.91, P=.06. The lower functioning group reported more distress (mean=43.55) than the higher functioning group (mean=32.05).

Significant differences were found between the groups on the measures of IQ as would be predicted. British Picture Vocabulary Scale T=7.29, P=.001; Ravens Matrices T=3.80, P=.001. A significant difference in Social reasoning ability was also evident T=3.94, P=.001. The higher functioning group obtained higher scores on all of these measures.

D I S C U S S I O N

The general experimental hypothesis has not been supported. There is no evidence of a relationship between social problem solving ability (as measured by the Vignettes) and levels of mood in the group as a whole. This lack of relationship may reflect a true finding, that is, the social problem solving skills of adolescents with learning disabilities are unrelated to their levels of distress. There are however a number of other possible interpretations of these results which are discussed below.

When the group were divided into two on the basis of verbal IQ, there was evidence of a trend towards higher levels of reported distress and lower vignette performance in the lower functioning group. This could indicate the possible existence of a relationship between poorer social problem solving skills and lower mood. However, because there are also significant differences in verbal IQ, non-verbal IQ and social reasoning ability between the groups (with lower scores obtained by the lower functioning group on all three) the trend of lower mood could equally be attributable to these differences between the groups, or indeed to other factors which have not been measured (see below).

Type II Error

The hypothesized relationship between social problem solving and mood may exist but this sample of subjects has not been sufficiently large to detect it. Cohen (1992) suggests that a sample of 40 subjects is statistically big enough to detect a 'large effect'. However, this relationship may not be a 'large effect' if it exists. People with learning disability represent a particularly heterogenous group, both in terms of the etiology of their learning disability and the variability in levels of IQ. This sample in particular show far more variation in IQ than was originally hoped for. These two issues suggest that a much larger sample would be more likely to demonstrate the existence of this relationship.

Construct Validity, reliability and utility

Another possible explanation is that the Vignettes were not providing a measure of social problem solving ability, or, that if they were indicating problem solving ability, they were not doing so accurately enough. In other words, the Vignettes may not be measuring the construct of social problem solving they were intended to do. This explanation could be supported by the finding that Vignettes scores were highly correlated with the BPVS (P=.001) and the BAS social reasoning scores (P=.001). This suggests that Vignette performance tapped the same skills as these measures that is, levels of social reasoning and verbal IQ.

The Vignettes have not been standardized or even tried out on a sufficiently large sample as Barker et al (1994) suggest new measures should be, and this clearly leaves the question of reliability raised.

An issue that also needs to be considered is whether an individual's vignette performance would accurately reflect their ability to resolve real problems on a day to day basis. Participants were asked, and most agreed that they would deal with the sort of problems depicted in the vignettes in the same way in real life. The reliability of these responses could be usefully verified by obtaining reports about social problem solving skills and other adaptive behaviour from teachers and parents or carers. Comparison of an individual's vignette performance with these informant reports would enable an evaluation of the reliability of the young person's responses, and therefore improve the potential validity of the vignette as a measure of social problem solving ability.

To examine the utility of the vignettes to detect problem solving ability, a comparison with an existing measure of problem solving skill could be made. For example the Means End Problem Solving technique (Platt & Spivack 1989). This would provide an objective comparison of problems solving with a standardized measure. Although this would not represent an identical point of comparison, a high correlation between scores on the two scales

would support the construct validity of the vignettes.

Another possible explanation of these results is that the sample of subjects are unrepresentative of adolescents with learning disability. The majority of the group (n=31) were still at school in full-time education, and so could argued to be enjoying a relatively protected environment. This hypothesis is supported by the low levels of anxiety and depression found (see below). It is quite possible that had the sample consisted of a whole group of adolescents who had already left school, and were trying to negotiate the outside world, there could be very different results. Other possible explanatory factors include; this group of young people were particularly well adjusted, or, that the sample did not report their levels of mood reliably. The inclusion of so many participants who had very low functioning makes this more likely. Both the adapted version of the Zung anxiety scale and the Subjective Stress Scale were designed for completion by adults, and may not be worded appropriately for an adolescent group.

What were the Vignettes measuring?

Positive correlations were found between the Vignette scores, Ravens Matrices, the BPVS and Social Reasoning. This suggests that a) the vignettes were tapping IQ levels, b) that they were drawing on social reasoning ability, and c) that they were

drawing on verbal skills. The relationship between the vignette scores and Social Reasoning and BPVS scores is more significant (P=.001) than the relationship with Ravens Matrices - the non-verbal IQ index (P=.05), suggesting that the relationship with verbal skills is more powerful. It could be argued that the vignettes represent a combined measure of social reasoning and language skills, although this is highly speculative.

The significant negative correlation between verbal IQ and levels of depression ($p<.03$) suggests that participants with higher verbal IQ are less depressed. Or this may be a reflection of higher receptive verbal skills being associated with lower rates of depression (rather than general verbal IQ). However, as the scores from Raven's Matrices (non-verbal IQ) and the BPVS were so highly correlated ($p<.001$), this lends considerable support to Dunn et al's (1982) claims that the BPVS is measuring a general IQ factor.

The relationship of higher verbal IQs being associated with lower levels of depression is interesting. It suggests that verbal IQ may serve as an ameliorating factor. Manikam et al (1995) also reported a negative correlation between IQ (measured by the WISC-R) and levels of depression in their sample of adolescents with learning disability, although the relationship was less pronounced (P=.05). This suggests that adolescents with lower levels of IQ show more depression. A trend towards higher levels

of depression in the lowest IQ group was found in this study when the group was divided by IQ. The group labelled 'moderate/severe' the lowest IQs (of less than 41 points) showed the highest mean level of depression at 10.7 (table 9), in comparison to those in the other groups whose means were all around 7 (see tables 7, 8, and 9).

Manikam et al (1995) suggested that the relationship between lower IQ and higher depression was ameliorated by adaptive skills. The lack of a measure of adaptive skills in this study means that a comparison on this level is not possible, although this is an interesting relationship.

Measures of Mood

Adapted Zung Anxiety Scale

Lindsay et al (1988) do not report levels of anxiety in their adaptation sample. In another study where the scale is reportedly used, Lindsay et al (1994), the authors appear to have changed the scoring procedure from the method suggested in the original adaptation (1988), as mean levels of >30 are reported. The adapted version of the scale enables a maximum score of 20. making comparison of anxiety levels between the studies meaningless. However, the mean level of 4.6 (table 1) in this study must represent relatively low levels of anxiety as this

score suggests that, on average, less than a quarter of the scale items were responded to indicating the presence of a symptom.

Reliability

Another consideration is the ease with which the scale items were understood. It was my impression that despite the adaptations made to the measure by Lindsay et al (1988), the scale is still not worded in a way that is easily understood. Despite having used the alternative wording for some questions, a number of participants were still unclear about what they were being asked, and I had to provide yet another alternative explanation. Item 4 for example asks, "do you feel you are falling apart and going to pieces?" and was still found confusing by some participants even after the two alternative versions of the wording had been given. (The alternative versions are "do you feel everything is going wrong and there is nothing you can do about it?", and "do you feel you can't cope/carry on with things any more?".

Another issue that suggests the Zung was not a very accessible scale for this population was Item 20, which asks "Do you have nightmares". Eight participants responded yes to this question. However when this question was phrased differently in the Birleson depression inventory, "Do you have horrible dreams?". 14 participants responded positively. This suggests that when the question was phrased this way it was easier to understand. These

difficulties indicate that the Zung has not been a reliable measure. However, it is only fair to add that the inclusion of some participants with moderate/severe learning disability means that a number of participants had very limited levels of comprehension.

Birleson Depression Inventory

The Birleson Depression Inventory has the advantage of being developed specifically for use with children. Its phrasing was generally more easily understood by the participants. The mean levels of depression reported by this sample was 8.10 (table 1). This suggests that these participants were not depressed, as they clearly fall below the 'cut-off' rate for depression of 13/18 reported in Birleson's (1981) standardization sample.

Subjective Stress Scale

The Subjective Stress Scale is the only measure which was designed specifically for people with learning disabilities, and probably for this reason, also seems to have worked reasonably well. The mean level of stress found here of 25.54 and SD = 15.40 (table 1) reflect similar values to those reported in the standardization sample (mean 24.2, SD=17.30), Bramston (1994). The range of scores shown by this sample from 0 - 62 suggests that the scale is able to reflect considerable individual

variability.

Responses to the Vignettes

The range (0 - 28) and variability (SD=7.1) of the vignette responses are difficult to interpret in the light of the uncertainty about exactly what they may be measuring. However, it is worth suggesting that the variability may reflect the presence or absence of relevant personal experience individual participants had. Many of the young people may have already encountered people or other children who would potentially take advantage of them, or had some experience of negotiating independent travel with a parent for example. However at 16, the age of the majority of the participants, some of the scenarios portrayed in the vignettes are still likely to be hypothetical. There is also the issue that the answers given by participants may not reflect what they would actually do in such a situation.

The tendency to confound personal feelings in the responses to the social problem solving scenarios reported by Williams (1991) was shown by some participants. But as Responses given in the first person were included as acceptable in the Vignette scoring criteria (see Appendix B), this was not viewed as a problem and was still considered to be a reflection of problem solving ability. The tendency to make implausible importation (Williams, 1991) was observed in only five subjects. Generally the

participants tended to acquiesce to the opinions/demands of parents in the stories. Only seven participants addressed the issue of Sharon travelling independently (Vignette 1: Appendix A), most resolved the situation by suggesting that the parents took her to the cinema or that she travelled with someone else. Only 6 participants addressed the age appropriateness of Peter wanting to leave home (Vignette 4). This acquiescence may reflect the relative immaturity of these young people, or it could be indicating the existence low self-regulation ability and or poor self confidence.

Recruitment Difficulties

The reasons that lay behind the low recruitment rates are not altogether clear. There are a number of possible explanations. The original group of subjects who were approached via the register (and through the post) had already been quite extensively researched. It is likely therefore that they had in fact been 'over-researched' or were just fed up with participating in research projects. However, as the recruitment rate of participants approached through the other two registers (in other boroughs) also showed very low rates of response, it is more likely that the difficulty concerned the *way* they were approached. This was limited by the demands of the three local research ethics committees, who gave permission to carry out the research. Potential participants had to be provided with information sheets and consent forms. It is quite possible that

these official looking forms put people off. The wording of these sheets had to be simplified in an attempt to make them comprehensible. But the vocabulary may still have been too complex, or the literacy skills of the potential participants insufficient to read it. The people who were listed on these registers tended to be those who needed care from statutory services and were less independent. The postal procedure required the participant to read and understand 2 sheets, and sign and return one of the forms by post, and was rather complex - indeed some of the carers who responded on a participants' behalf had difficulty in following the instructions accurately. So there are a number of factors that may have contributed to these difficulties. Alternatively (or additionally) the information may not have been conveyed in a sufficiently positive manner.

The impersonal nature of a postal overture is particularly unsatisfactory for this population. The prospect of meeting with a strange person was probably also a deterrent. Some participants who had agreed to meet with me were initially very apprehensive about spending time alone with me. These difficulties were largely overcome through the recruiting at the schools. The teachers were prepared to put a little positive pressure on potential participants by assuming that everyone would participate unless their parents had indicated they did not want them to do so. The resulting rates of recruitment were 93% from the schools.

I also suspect that in trying to recruit people with learning difficulties for research, it is particularly important to portray an interesting, non-threatening and fun project. Ideally with some obvious benefit for the participants built, because the lack of incentive is not likely to help. It is also important to cultivate the carers and other professionals involved with this population, as their influence as trusted adults is likely to have a significant impact on the attitude of these young people.

A number of improvements could be made to this study. In retrospect, it would have been more valid to have used an existing measure of social problem solving that has already been standardized. Using a newly constructed (and unstandardized) measure has confounded the possibility of evaluating the experimental hypothesis with the problem of construct validity.

It would be interesting to look at the results of administering the measures to a much larger sample try and to establish whether a relationship exists between social problem solving and mood. An older age group than were used here would be more likely to show evidence of such a relationship if it exists, because this sample is biased by so many of the participants being at school.

However, even if the vignettes were able to indicate social

problem solving skills accurately there are still other factors which might affect an individual's performance on this measure. For example the presence of a recent life event such as a bereavement might significantly reduce vignette scores and increase reported depression, therefore not accurately reflecting social problem solving ability in less trying circumstances.

This study has limitations in its ability to take into account other variables which may impact on an individual's global functioning. For example the existence of subtle organic factors which are increasingly thought to contribute to the presence of milder learning disabilities might also impair short term memory or retrieval over and above the general intellectual limitation. The behaviour of the young person's family could be another salient characteristic. Families vary considerably in their ability to be supportive and facilitate opportunities for their children to experience and learn from, and this is likely to impact on the degree of sophistication in social problem solving skills that are developed.

Consequently if a relationship between levels of social problem solving ability and mood could be demonstrated, it would need to be treated with caution, because of these and other possibly contributory factors.

If evidence of this relationship could be demonstrated, it would indicate that interventions to improve social problem solving skills may be helpful. Training that focuses on enabling the individual to develop self-regulation skills like 'metacognitive' problem solving (Williams & Jones 1997), potentially offers a very promising way of intervening. I would suggest that it is both a moral obligation and a prophylactic measure to equip people with learning disabilities with as many skills as possible to aid their negotiation of the adverse social conditions they face.

In conclusion no evidence of a relationship between social problem solving skills and mood has been found. However there are a number of confounding factors that may have prevented the demonstration of such a link. These include a newly developed measure, the inclusion of subjects with very low cognitive functioning and that most of the participants were contained within the relatively protected environment of school.

REFERENCES

Abrahamson, L.Y., Seligman, M.E. and Teasdale, J. (1978) Learned helplessness in humans: critique and reformulation. Journal of Abnormal Psychology,87, 49-74.

Bank-Mikkelsen, N (1980) "Denmark" in R.J. Flynn & K.E.Nitsch (eds) Normalisation, Social Integration and Community Services. Austin, Texas:Pro-ed.

Barker, C., Pistrang, N. & Elliott, R. (1995) Research Methods in Clinical and Counselling Psychology. Wiley.

Benson, B.A. & Ivins, J. (1992) Anger, depression and self-concept in adults with mental retardation. Journal of Intellectual Disability Research, 36, 169-175.

Birleson, P. (1981) The Validity of Depressive Disorder in Childhood and the Development of a Self-Rating Scale: A Research Report. Journal of Child Psychology and Psychiatry, 22, 73-88.

Bramston, P. (1994) Lifestress Test Manual Interview Edition. University of Southern Queensland, Australia.

Bramston, P. & Bostock, J. (1994) Measuring Perceived Stress In People With Intellectual Disabilities: The Development Of A New Scale. Australia and New Zealand Journal of Developmental Disabilities, 19(2), 149-157.

Bramston, P. & Fogarty, G.J. (1995) Measuring Stress in the Mildly Intellectually Handicapped: The Factorial Structure of the Subjective Stress Scale. Research in Developmental Disabilities, 16(2), 117-131.

Bregman, J.D. & Hodapp, R.M. (1991) Current developments in the understanding of mental retardation. Part I: Biological and phenomenological perspectives. Journal of the American Academy of Child and Adolescent Psychiatry, 30, 7077-719.

Bryan, D.P. & Herjanic, B. (1980) Depression and suicide among adolescents and young adults with selective handicapping conditions. Exceptional Education Quarterly, 1(2), 57-65.

Castles, E.E. & Glass, C.R. (1986) Training in Social and Interpersonal Problem-Solving Skills for Mildly and Moderately Mentally Retarded Adults. American Journal of Mental Deficiency, 91(1), 35-42.

Cohen, J. (1986) Learning disabilities and psychological development in childhood and adolescence Annals of Dyslexia, 36, 287-300.

Cohen, J. (1992) A Power Primer. Quantitative Methods in Psychology, 112(1), 155-159.

Crews, D.W.Jr, Bonaventura, S. & Rowe, F. (1994) Dual diagnosis: prevalence of psychiatric disorders in a large state residential

facility for individuals with mental retardation. American Journal on Mental Retardation, 98(6), 688-731.

Davila, J., Hammen, C., Burge, D., & Daley, S.E. (1996) Cognitive/interpersonal correlates of adult interpersonal problem-solving strategies. Cognitive Therapy and Research, 20(5), 465-480.

Diagnostic & Statistical Manual of Mental Disorders 4th edition. (1994) American Psychiatric Association.

Dollinger, S.J., Horn, J.L. & Boarini, D. (1988) Disturbed Sleep and Worries Among Learning Disabled Adolescents. American Journal of Orthopsychiatry, 58(3), 428-434.

Dunn, L.M., Dunn, L.M., Whetton, C. & Pintillie, D. (1982) British Picture Vocabulary Scale Manual For Long and Short Forms. NFER Nelson.

Dyson, L.L. (1993) Response to the Presence of a Child With Disabilities: Parental Stress and Family Functioning Over Time. American Journal on Mental Retardation, 98(2), 207-218.

Einfeld, S.L. & Tonge, B.J. (1996) Population prevalence of psychopathology in children and adolescents with intellectual disability: II epidemiological findings. Journal of Intellectual Disability Research, 40(2), 99-109.

Elliott, C.D., Murray, D.J. & Pearson, L.S. (1983) British Ability Scales. NFER-Nelson.

Erikson, E.H. (1980) (1st published 1959) Identity and the Life Cycle. W.W. Norton.

Fernell, E. & Gillberg. C. (1992) Self-esteem in children with infantile hydrocephalus and in their siblings: use of Piers-Harris self-concept scale. European Child and Adolescent Psychiatry, 1(4),227-232.

Fogarty, G.J., Bramston, P. & Cummins, R.A. (1996) Validation of the Lifestress Inventory. Research In Developmental Disabilities, 23, 52-61.

Frauenknecht, M., Black, D.R. & Coster, D.C. (1996) Adolescent problem solving, stress and the Stepped Approach Model(SAM). American Journal of Health Behaviour, 20(2), 30-41.

Gath, A. & Gumley, D. (1986) Behaviour problems in retarded children with special reference to Down's syndrome. British Journal of Psychiatry, 149, 68-74.

Gillberg, C., Persson, E., Grugman, M. & Themner, U. (1986) Psychiatric disorders in Mildly and Severely Mentally Retarded Urban Children and Adolescents: Epidemiological Aspects. British Journal of Psychiatry, 149, 68-74.

Gottesman, I.I. (1963) "Genetic aspects of intelligent behaviour. In N. Ellis (ed.) Handbook of Mental Deficiency. New York: McGraw-Hill. Cited in Zigler & Hodapp (1986) below

Havinghurst, R. J. (1972) Developmental Tasks and Education. New York, David MacKay. Taken from Sugarman below.

Healey, K.N. & Masterpasqua, F. (1992) Interpersonal Cognitive Problem-Solving Among Children With Mild Mental Retardation. American Journal on Mental Retardation, 96(4), 367-372.

Helsel, W.J. & Matson, J.L. (1988) The relationship of depression to social skills and intellectual functioning in mentally retarded adults. Journal of Mental Deficiency Research, 32, 411-418.

Iverson, J.C. & Fox, R.A. (1989) Prevalence of psychopathology among mentally retarded adults. Research in Developmental Disabilities, 10, 77-83.

Lenhart, L.A. & Rabiner, D.L. (1995) An integrative approach to the study of social competence in adolescence. Development and Psychopathology, 7, 543-561.

Lindsay, W.R. & Michie, A.M. (1988) Adaptation of the Zung self-rating anxiety scale fro people with a mental handicap. Journal of Mental Deficiency Research, 32, 485-490.

Lindsay, W.R., Michie, A.M., Baty, F.J., Smith, A.H.W. & Miller, S. (1994) The consistency of reports about feelings and emotions from people with intellectual disability. Journal of Intellectual Disability Research, 38, 61-66.

Lochman, J.E., Wayland, K.K. & White, K.J. (1993) Social goals: relationship to adolescent adjustment and social problem solving. Journal of Abnormal Child Psychology, 21, 135-151.

Luria, A.R. (1959) The Directive Function of Speech. Word, 15, 341-353.

Luria, A.R. (1966) Higher Cortical Functions in Man. London: Tavistock.

Manikam, R., Matson, J.L., Coe, D.A. & Hillman, N. (1995) Adolescent Depression: Relationships of Self-Report to Intellectual and Adaptive Functioning. Research in Developmental Disabilities, 16(5), 349-364.

Marton, P., Connolly, J., Kutcher, S. & Korenblum, M. (1993) Cognitive social skills and social self-appraisal in depressed adolescents. Journal of the American Academy of Child Adolescence and Psychiatry, 32 (4),739-744.

Matikka, L.M. (1996). Effects of psychological factors on the perceived quality of life of people with intellectual disabilities. Journal of Applied Research in Intellectual

Disabilities, 9(2), 115-128.

Matson, J.L. & Sevin, J.A. (1994) Theories of Dual Diagnosis in Mental Retardation. Journal of Consulting and Clinical Psychology, 62(1), 6-16.

Nezu, C.M., Nezu, A.M, & Arean, P. (1991) Assertiveness and Problem-Solving Training for Mildly Mentally Retarded Persons With Dual Diagnoses. Research in Developmental Disabilities, 12, 371-386.

Nezu, C.M. & Nezu, A.M. (1994) Outpatient Psychotherapy for Adults With Mental Retardation and Concomitant Psychopathology: Research and Clinical Imperatives. Journal of Consulting and Clinical Psychology, 62(1), 34-42.

Pellegrini, D.S. (1985) Social cognition and competence in middle childhood. Child Development, 56, 253-264.

Platt, J., & Spivack, G. & Altman, D. (1974). Adolescent problem-solving thinking. Journal of Consulting and Clinical Psychology, 42, 787-793.

Peterson, C. & Seligman, M.E.P. (1984) Causal explanations as a risk factor for depression: theory and evidence. Psychological Review, 91, 347-74.

Rabiner, D.L., Lenhart, L. & Lochman, J.E. (1990) Automatic vs.

reflective problem solving in relation to children's sociometric status. Developmental Psychology, 71, 535-543.

Reiss, S. & Benson, B.A. (1984) Awareness of Negative Social Conditions Among Mentally Retarded, Emotionally Disturbed Outpatients. American Journal of Psychiatry, 141(1), 88-90.

Reiss, S. & Benson, B.A. (1985) Psychosocial Correlates of Depression in Mentally Retarded Adults: 1. Minimal Social Support and Stigmatization. American Journal of Mental Deficiency, 89(4), 331-337.

Reiss, S. & Szyszko, J. (1983) Diagnostic Overshadowing and Professional Experience with Mentally Retarded Persons. American Journal of Mental Deficiency, 87(4), 396-402.

Reynolds, W.M. & Miller, K.L. (1985) Depression and Learned Helplessness in Mentally Retarded and Non mentally Retarded Adolescents: An Initial Investigation. Applied Research in Mental Retardation, 6, 295-306.

Rutter, M., Tizard, J., Yule, W., Graham, Y. & Whimore, K. (1976). Isle of Wight studies 1964-1974. Psychological Medicine, 7, 313-332

Sadowski, C. & Kelley, M.L. (1993). Social problem solving in suicidal adolescents.Journal of Consulting and Clinical Psychology, 61(1),121-127.

Shallice, T. (1988) From Neuropsychology to Mental Structure. Cambridge University Press.

Shure, M.B. & Spivack, G. (1974) Preschool Interpersonal Problem-solving (PIPS) test: Manual. Philadelphia: Hahnemann University, Dept, of Mental Health Sciences.

Sinason, V. (1986) Secondary Mental Handicap And Its Relationship To Trauma. Psychoanalytic Psychotherapy, 2(2), 131-154.

Sinason, V. (1992) Mental Handicap And The Human Condition. Free Association. London.

Smith, D.C. (1986) Interpersonal Problem-Solving Skills of Retarded and Nonretarded Children. Journal of Applied Research in Mental Retardation, 7, 431-432.

Stevenson, D.T. & Romney, D.M. (1984). Depression in learning disabled children. Journal of Learning Disabilities, 17(10), 579-582.

Sugarman, L. (1993) Life-span Development. Concepts, Theories and Interventions. Routledge.

Szivos-Bach, S.E. (1993) Social comparisons, stigma and mainstreaming: the self esteem of young adults with a mild mental handicap. Mental Handicap Research, 6(3), 217-235.

Szivos, S.E. & Griffiths, E. (1990) Group Processes Involved in Coming to Terms with a Mentally Retarded Identity. Mental Retardation, 28(6), 333-341.

Szivos, S.E. & Travers, E. (1988) Consciousness Raising among Mentally Handicapped People: A Critique of the Implications of Normalization. Human Relations, 41(9), 641-653.

Tarjan. G., Wright, S., Eyman, R. & Keeran, C. (1973) Natural history of mental retardation:Some aspects of epidemiology. American Journal of Mental Deficiency, 77, 369-379.

Vygotsky, L.S. (1978) Mind in Society: The Development of Higher Psychological Processes. Harvard University Press.

Vygotsky, L.S. (1987) The problem of mental retardation (a tentative working hypothesis. Soviet Psychology, 26, 78-85.

Wehmeyer, M.L. & Kelchner. K. (1994) Interpersonal Cognitive Problem-Solving Skills of Individuals with Mental Retardation. Education and Training in Mental Retardation and Developmental Disabilities, 29(4), 265-278

Wikler, L., Wasnow, M.S.W. & Hatfield, E. (1981) Chronic Sorrow Revisited. American Journal of Orthopsychiatry, 51(1),63-70.

Williams, J.P. (1991) Comprehension by learning-disabled and non -disabled adolescents of person/social problems in text. American

Journal of Psychology, 104(4), 563-586.

Williams, W.H., Ellis, N.C. & Jones, R.S.P (1996) Teaching communication skills to persons with developmental disabilities: Effects of teaching by self-instructive and metacognitive approaches and of individual differences on generalization of Skills. Routledge.

Williams, W.H. & Jones, R.S.P. (1997) chapter "Teaching cognitive self-regulation of independence and emotion control skills" in Dagnan, D., Loumidis, K.S. & Kroese, B. (eds) Cognitive Therapy For People With Learning Disability. Routledge.

Wolfensberger, W. (1972) The principle of normalization in human services. Toronto: National Institute on Mental Retardation.

Zigler, E. (1961) Social deprivation and rigidity in the performance of feebleminded children. Journal of Abnormal and Social Psychology, 62, 413-421.

Zigler, E (1962) Social deprivation in familial and organic retardates. Psychological Reports, 10, 370-384.

Zigler, E. & Hodapp, R.M. (1986) Understanding Mental Retardation. Cambridge University Press.

Zung, W.K. (1971) A rating instrument for anxiety disorders.

Psychosomatics, 12, 371-9.

APPENDIX A

TRANSITIONAL VIGNETTES

---

1. Sharon is 19 years old, she wants to meet her friend at the cinema to see a film. Sharon is good at using buses. But Sharon's parents say they don't want her to go on her own. What should Sharon do?

.....

2. John is 20 and Tony is 42. John and Tony go to the same day centre. Tony borrows money from people and doesn't give it back. John knows about this. Tony asks John to lend him £5.00. What should John do?

.....

3. Ruth and her boyfriend Steve have been going out for two years. They are both 23 years old. Ruth and Steve are thinking about making love. Ruth's parents have not talked to her about sex. How can Ruth and Steve make sure that Ruth doesn't get pregnant?

.....

4. Peter is 25 years old and lives at home with his parents. Peter wants to move to a flat of his own. But Peter is afraid that his parents will be upset if he leaves home. What should Peter do?

.....

5. Linda is 21 and has been offered a job she likes at a shop near where she lives. Linda would like to take the job. But Linda is scared of problems with the job that she might not be able to cope with. What should Linda do?

.....

6. Paul is 19 and Susan is 18, they go to the same club. Paul like Susan a lot and would like her to be his girlfriend. Paul thinks that Susan likes him but he's not sure. What should Paul do?

.....

APPENDIX B

SCORING CRITERIA FOR TRANSITIONAL VIGNETTES

Each story is scored out of a possible 5 points.

Where a number of possible solutions are given by the participant, they should be given the maximum points they are eligible for, even if they have not specified the 'ideal' solutions below as the best ones.

If the participant says "I wouldn't/would...." rather than using the name of subject in the story, this is ok and still counts as an acceptable answer.

If the ideal solution is implicit in the answer, this too is acceptable.

If the main aim of story is not resolved explicitly/implicitly no points are given.

Any responses to prompts from the interviewer which are directive should be disregarded.

'IDEAL' SOLUTIONS

1. Sharon

a) The specified aim of this story is for Sharon to go to the pictures with her friend. Therefore a solution/strategy that results in achieving this aim (eg. Sharon goes with a friend, is given a lift etc)

scores = 2 points

b) If the secondary issue of travelling independently is also resolved (ie. Sharon travels independently on at least the outward journey, if not both, this would include solutions where this is implicit eg. "sneaking out") the participant earns an ADDITIONAL

score = 3 points

If a) and b) are given the participant scores 5.

2. John and Tony

a) The main issue is that in the face of evidence that Tony does

not repay loans, John should not lend Tony the money. Therefore refusing to lend Tony the money:-

score = 4 points

However, if

(b) the participant specifies that in an exceptional circumstance he might be lent the money this:-

scores an ADDITIONAL 1 point

OR

(c) if a strategy of ensuring the money is repaid somehow is specified this too

scores an ADDITIONAL 1 point

(*nb if only b) or c) are given, 1 point in total is scored.)

3. Ruth and Steve

The main issue is that Ruth and Steve avoid a pregnancy.

a) So using contraception (eg. condom, or even 'protection' if this is clarified as contraception)

score = 3 points

b) getting some information about 'relationships' contraception, pregnancy, going to the clinic or doctors

score = 2 points

If both a) and b) are given score = 5

4. Peter

Main issue is that Peter wants to move out

a) Peter moves explicitly (or implicitly) score = 2 points

b) if the additional issue of Peter's parents' distress is also addressed

score = 3 points

If both a) and b) are given score = 5

**nb if it the matter is discussed with parents BUT Peter only moves if the parents say yes, this = 0 score

5. Linda

Main issue is Linda wants to take the job.

a) If Linda takes the job/gives it a go etc

score = 2 points

If the additional issue of her anxiety is also addressed:-

b) Linda talks to someone about her concern

score = 1 point

c) Linda talks to the manager (gets training etc)

score = 2 points

6. Paul and Susan

Main issue is that Paul wants Susan to go out with him.

a) A strategy that will lead him to find out how Susan feels about him (eg. asks her out, talks to her, gets a friend to ask her etc)

score = 4 points

b) Talking to someone else or asking their advice

score = 1 point