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Factors Affecting the Success of  
Intellectually Handicapped People  
Placed in Unsheltered Employment

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## Abstract

This study aimed at providing some initial information about those variables associated with 'success' of intellectually handicapped people working in unsheltered jobs in New Zealand. Subjects were selected from clients of the local Branch of the New Zealand Society for the Intellectually Handicapped using vocational status and supervisor consensus. Two groups of 18 subjects each were compared on demographic, social and vocational variables while controlling for sex and secondary handicap. For one assessment instrument, it was also necessary to control for the independence of subscale pairs. Results indicated that further refinement of the Adaptive Functioning Index scales was required but that programmes designed to improve social problem solving ability and communication skills may aid in placing and maintaining trainees in unsheltered jobs.

The adherence to a client-centered placement procedure was advocated together with increases in the documentation of training programmes. These steps would allow the expansion of the present study to one with improved control procedures and wider scope.

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### Historical Antecedents

A characteristic feature of science can be seen in its emphasis on classification of phenomena into distinctive groups for systematic study. With the increasing attention devoted to social research in past years it is not surprising then that mental retardation came to be recognised as a pattern of social deviance distinct from for example, mental illness.

One of the earliest recorded distinctions between mental deficiency and mental illness was made in the time of Edward I, however the differentiation was largely administrative in nature, serving as it did, to define those people whose disability was permanent (the mentally retarded) and who as a consequence had their property and assets appropriated by the Crown, and those whose disability was relatively infrequent (the mentally ill) whose property was held in trust and run for them when they were incapable of it (Clarke and Clarke, 1974).

With the advent of industrialisation and the consequent movement away from smaller, home based family businesses to city based industries employing large numbers of people, the mentally retarded person became more of a family liability. It was no longer possible to easily supervise the handicapped person because as many people as possible were required to work to maintain the family. If one of the economic unit had to stay home to look after a handicapped sibling, it represented a significant loss of income. This situation resulted in number of mentally handicapped people being turned out of their family home (Maloney and Ward, 1979). Thus changing social conditions pre-empted the need for a change in the emphasis of the care of the mentally retarded. In the 19<sup>th</sup> century, a disease model was widely used in the orientation of care of mentally handicapped people, and this approach lead to the responsibility for the oversight of the mentally handicapped being given to the medical profession, a logical, if not entirely appropriate choice at the time.

From the beginning of this century an increased amount of attention was paid to the scientific aspects of mental retardation. Such attention

was not completely beneficial. Darwin had recently published his evolutionary theory, and this coupled, with a popular approach to genetics lead to the belief that a population containing mentally retarded people would eventually (because of their promiscuity and poor control of basic drives) become tainted with inferior genes and hence show a progressive decline in characteristics thought desirable at the time such as moral principles, and intelligence. While this view changed later, even in the 1950's there was an identified sub-group of the mentally retarded classified as 'moral defectives' (Tregold and Soddy, 1956) and susceptible to sexual promiscuity if female and/or if male, petty crime. The development of this popular-view of mental retardation and its implications, was instrumental in the construction of institutions where people described as mentally retarded could be placed. Legal provision at this time (pre 1920) was concerned with the protection of society and this is reflected in the following passage from Fernald (in Sarason and Doris, 1969)

"the feeble-minded are a parasitic, predatory class, never capable of self support or of managing their own affairs..... [they] cause unutterable sorrow at home and are a menace and danger to the community".

Fernald was one of the authors who contributed to the rise of the eugenics movement (Clarke and Clarke, 1974). At this point, definitions of mental deficiency were sufficiently loose to allow the incarceration of people with IQ's in the normal range. Clearly, there was a need to refine the criteria for classification, as the amount of subjective judgement involved in the 'mental deficiency' label was considerable and left the categorisation open to abuse, intentional or otherwise. At this time there were three main areas of attention in the endeavour to provide a meaningful definition of mental retardation. The first concentrated on the issue of social incompetence. However a definition centered on social incompetence was generally too vague, and so was still to a large extent arbitrary (British Psychological Society, 1955). The second emphasised educational factors, that is, persistent educational failure, but once again was too wide as it is obvious that while educational failure may be primarily due to mental deficiency, it may also be due to other things such as a learning disability or unremediated visual problem (Wallin, 1949). The third is that of IQ.

The poor reliability of this category may arise from measurement error or factors due to individual tests. Also, cognitive growth does not necessarily happen in a constant pattern with reference to age peers. (Suran and Rizzo, 1979)

An attempt to achieve some order in terminology was made by the American Association of Mental Deficiency which convened a symposium in 1959. The definition that arose from this meeting (Heber, 1961) has become almost universally accepted in the mental retardation field (Craft, 1979).

Heber's definition reads as follows.

"Mental retardation refers to subaverage general intellectual functioning which originates during the developmental period and is associated with impairment in one or more of the following: 1) maturation, 2) learning and 3) social adjustment."

The manual defines subaverage as more than one standard deviation below the population mean for age groups concerned, intellectual functioning in terms of 'objective tests', developmental period as childhood to 16 years, maturation in terms of rate of attainment of self-help skills, learning ability as the acquisition of achievements during school years, and social adjustment in terms of ability to maintain oneself in adult life in community living, employment and conformity to accepted standards. Throughout Heber's treatise it was emphasised that mental retardation as a label denoted current functioning of the individual without necessarily auguring permanent arrest.

Subsequent to the release of Heber's (1961) manual the meeting of the World Health Organisation Expert Committee (1968) opposed the term 'borderline mentally retarded' for the IQ group 68-85 (sixteen percent of the general population) and this has been removed from the classification levels. Thus IQ scores now have to fall below the second standard deviation of a standardised test to fall within the "retarded" range .

Concurrent to the rise of this altered definition, changes in society were occurring that would provide a climate for positive

revisions in lifestyle for many of the mentally handicapped. Factors that contributed to this attitude change included such things as the non-occurrence of the predicted national degeneracy, the discovery that genetic variation was more complex than at first suspected; the implication of environmental factors in some conditions and a generally more lenient approach to some forms of social deviance. Also, there had been a few successful programs run in institutions that suggested that the intellectually handicapped were capable of learning new skills (Clarke and Clarke, 1974).

In the first half of this century, the provision of services for the intellectually handicapped was largely catered for within an institutional framework. The demand for these services was such, that often institutions were cramped and hence understaffed. Also, in a number of cases placement in an institutional facility was for life. This combined with the fact that institutions for the intellectually handicapped were often built in isolated areas often meant that an individual placed in an institution had very little exposure to society.

Although the process has been gradual, the preceding two or three decades has seen a change from emphasis on institutional, to community services. Not only is this arrangement better economically, but it also acknowledges the fact that residence in a hospital-type situation is neither necessary nor desirable for the greater proportion of intellectually handicapped people. The percentage of people needing nursing care which can only be provided in a hospital is a relatively small proportion of the handicapped population. However, even now there are people who question the advisability of discharging some of the intellectually handicapped from institutional care. Graham, (1976) contends that any institution catering for intellectually handicapped people have a responsibility to ensure that discharge from institutional care will result in an improved lifestyle for those discharged. He reiterates the concerns of others in the area, saying that small homes for the handicapped within the wider environment of the community do not guarantee a greater level of 'normalisation' than the institutional villa. The prime consideration when making the decision to discharge or not, should be to make a client-centered judgement based on a number of questions, such as a) what constitutes a full life for the handicapped person; and b) what elements of everyday life contribute to this full life.

It may be that if the elements of a full life are available both within and outside of the institution, then no appreciable advance in normalisation will be gained from community placement.

The process of returning (or maintaining) developmentally disabled people to a community based lifestyle and the integration of them into patterns of behaviour as culturally normative as possible has been generally subsumed under the rubric of 'normalisation'. Normalisation can most comprehensibly be defined in terms of 'rhythm of life' (Wolfensberger, 1972). This involves encouraging the handicapped person to maintain a lifestyle compatible with the culture around him. Introduction of the normalisation principle is seen as most easily implemented in facilities that cater for smaller numbers of people and so have a favourable staffing ratio, and better similarity to a 'family' situation.

In practise, there are problems with normalisation, not the least is defining what 'normal' is and the difficulty of conducting training programs that allow sufficient spontaneity to develop hence guarding against the dangers of teaching overly compliant behaviour. There is also the question of who is to undertake the training, and the development of support services that widespread adoption of the normalising process will need. The choice is basically between a government or voluntary agency orientation or some combination of the two.

In New Zealand, the majority of social, residential and vocational services for mentally handicapped people are provided by the New Zealand Society for the Intellectually Handicapped (Inc.), the growth of which will be traced in the following section.

## Services in New Zealand

This section will briefly review the development of services for an intellectually handicapped person in New Zealand, and concentrate on the growth of the principle agency involved with provision of facilities for the developmentally disabled population, the New Zealand Society for the Intellectually Handicapped. This does not mean that it is the sole agency in the area. There are religious organisations, such as 'Marylands' run by the Brothers of St. John of God, a Catholic order, and facilities like the Hohepa Homes in Hawkes Bay, who subscribe to the Rudolf Steiner philosophy. However, these private agencies account for a very small proportion of habilitation services.

As early as 1892, it was recognised that there were children in the regular classroom who were misplaced because of the extent of their poor academic performance. The emphasis at this time appeared to focus mainly on the detrimental effect these underachievers or 'backward' children were having on the other members of the class, however, little was done to bring about understanding of the problem (Wenzell, 1965).

In 1896 two school inspectors suggested using a local Girl's school as a special school for backward children, but this suggestion was not implemented. The problem was in part recognised in 1899, when the then Minister of Education gave headmasters discretionary power to group pupils in different classes according to their respective abilities but it was not until 1908 that the growing awareness of a need for services in the schools for slow learners became action. The first school was established in this year for these children in Otago and catered for boys ranging in age from 7 to 16 years. It was not until 1916 however that a residential school for girls was opened near Nelson.

By 1919 the Department of Education endorsed the view that every large school ought to have a class for the 'subnormal' - and from this time there was an increase in the number of special classes. However progress was slow and by 1923 only 9 schools in New Zealand had established a special class. This unfortunate lack of classes hindered the development of the relationship between the pupils, parents and classes proposed by the Minister of Education in 1919 who had stated that through

the establishment of special classes, it was hoped to cater adequately for all 'feeble-minded' children in such a manner that will permit the majority of them to remain in their homes, under the supervision of qualified officers who will keep in close contact with them and will assist in placing the children in suitable employment when the proper time arrives (Wenzell, 1965).

At this stage in the development, services were concentrated on the 'educable' handicapped population. Very little was provided for those regarded as incapable of learning (the moderately, severely and profoundly retarded) other than provision for hospitalisation in large institutions. In this respect New Zealand closely paralleled most other countries.

Along the path to community care for intellectually handicapped people was the Social Security Act of 1938. This, was a wide and sweeping declared commitment on the part of the government to provide welfare within the community, funded entirely from taxation. The policy of the Act was to provide for payment of benefits designed to safeguard the people of New Zealand from disabilities arising from varied conditions, so as to promote the general welfare of the community (Matthews, 1972).

In response to the continuing need for community based services for intellectually handicapped people, and governmental inaction, a parent association was formed in 1949 as a pressure group to gain government support. As a result of efforts by this group, the government agreed in 1953 to establish special schools to cater for children with lower I.Q. levels and to subsidise running costs and in 1963 the minimum roll for these schools was reduced to five. Between 1960 and 1973 the Society received increasing financial support from Government towards the capital cost of establishing its services, and a small subsidy toward operating junior hostels. Also during this period, the first pre-school facilities were opened (1960) and the first Workshops for adults started (1962 approximately). In 1962 the association became the Intellectually Handicapped Children's Society a title that was subsequently revised to its present form in 1975.

In 1967 the Government provided for the Society's work to benefit under a new rehabilitation program for the disabled. Under this programme, the Society was given subsidy assistance towards the cost of salaries paid to its pre-school, special care centres and workshops.

1970 saw the establishment of a Royal Commission to report on Hospitals and Related Services. The Society's submissions urged that services for the intellectually handicapped should be dispersed throughout New Zealand, adjacent to the family and its community, and be provided in small local units. The Royal Commission agreed with these proposals and a recommendation along these lines was made to Government. In 1974, the Government accepted the Commissions recommendation and recognised that in economic terms provision of the services needed by intellectually handicapped children and adults could be provided at a much lower cost through community based agencies such as the Society. As a guide to the respective costs incurred, in 1976, the cost of maintaining a handicapped person in a Hospital Board Institution was approximately \$140.00 per week, as opposed to \$55.00 a week in a similar bed in the Society's hostels (N.Z.S.I.H., 1977).

In 1974 an agreement between the Hospital Boards and the Society provided for a) residential and Workshop services to built by the Hospital Boards and made available to the Society to operate, to cater for people in institutional care who could be expected to successfully live in the community and b) that the Government provide additional funding and staff training assistance to help the Society meet the increased demands.

The Philosophy and Policy booklet (1979), published by the Society, in paragraphs 17-21 outlines in general terms the various services needed by the intellectually handicapped person and their families to facilitate their development to the maximum possible. To date the Society, in 32 Branches caters for some 2,653 adults in 74 Worksops and Rural Training Units, 523 children in 44 pre-school and junior centers, and maintain 184 Residential facilities of all types. In addition to the aforementioned services, other needs are met as follows.

For infants and young children, a consultant Paediatrician service is provided for a limited number of hours per month. The paediatrician

receives a retainer from the Society, and no charge is made to the parent. Also, home support programs are available, under which staff with special training in education, social work and 'para-medical' skills visit the home to help and advise the parents. School age children, who have not been accepted into special schools run by the Education Boards, are able to attend special care services. Adults are served, not only by the numerous sheltered Workshops, but also by the organisation of social and recreational programs aimed at developing their personality, and promote their physical health. These aid in the integration of the handicapped person into the surrounding community.

In a corporate capacity, the Society fills the need for an advocate for the general rights of the intellectually handicapped in the community. Because of the nature of their handicap few mentally retarded people can effectively obtain all the benefits and services to which they are entitled or press for these rights to Government bodies.

In conclusion then, New Zealand is one of the few countries where a non-Government community based agency delivers the major part of the services for the developmentally disabled. In most other countries, the community agency mainly accepts the responsibility of being an advocate for the general and individual rights of the intellectually handicapped combined with some innovative work in aspects of services which once proven worthwhile, is transferred to a Government Department for widespread implementation.

There are advantages and disadvantages to this situation. For example, the absence of bureaucratic 'red-tape' enable a response to perceived needs to be initiated with greater rapidity and flexibility, however, the lack of a steady cashflow and relatively high dependence on volunteers make forward planning difficult.

The situation at present is not static - both the Government and the Society are continuing to revise and adapt the relationship that exists between them to improve efficiency and cost effectiveness.

Rapid growth in services has been paralleled by an increasing demand. The resulting pressure on the Society for places in facilities has accentuated the need to evaluate the utility of social and vocational

training programmes. One of the most valid methods of gauging effectiveness of programmes is to examine outcome of training in terms of personal competencies and life skills, (Gunzburg, 1973) especially to note the proportions of individuals who have been able to 'graduate' to the community.

Responding to this need for information on programme effectiveness, this present study was undertaken to initiate the development of comprehensive training guidelines, so that the facilities of the N.Z.S.I.H. (IHC.) can provide the instructional programming to maximise the potential of their clients. For some clients, the ultimate result of their attendance at the Workshops, will be progression to unsheltered jobs.

There are problems, however, with this type of evaluation (for example varied research design) not the least of which is the definition of adequate criteria of success of placement in unsheltered jobs. In the next section, an attempt is made to review the literature and define criteria for the selection of successful and non-successful subjects.

## CHAPTER 2

### Evaluation of Training Outcomes: Criteria For Success and Failure

The previous section outlined the growth of the primary agency involved with service delivery to the intellectually handicapped in New Zealand and the range of resources it provides.

This section will discuss how the criteria used to select 'successful' and 'non-successful' subjects for this study were developed.

#### Success Criteria

From the preceding examination of services available in this country, it appears that the physical prerequisites to enable the application of the normalisation principle are available in New Zealand. However, it is not sufficient to be content with merely geographically relocating the handicapped person into the surrounding community and thereby defining him or her as normalised (Beasley, 1980). Normalisation, as promoted by Wolfensberger (1972) has a more global orientation. It focuses on a number of areas, including leisure time pursuits, 'rhythm of life' and vocational habits. The concept of 'rhythm of life' quite succinctly summarises the major thrust of the principle of normalisation. Essentially it maintains that in order to experience a lifestyle as culturally normative as possible it is necessary to flow with the surrounding society. This will mean, for example, rising at an hour that allows sufficient time to have breakfast and complete any other necessary tasks before travelling to work, but not early because of convenience for others (e.g. supervisors of the facility). Normalisation also involves observing the natural breaks in the day at the usual hours (including meal times) and also recognising that it is necessary to distinguish between weekdays and weekends by a change of occupation and pace - and perhaps an increase in leisure time available. The lack of such distinctions has prompted Wolfensberger and others to criticise the facilities commonly described as 'institutions'.

For some of the developmentally disabled population, the principle of normalisation involves the expansion of their vocational placements away from the Workshop to an unsheltered placement in a suitable community industry or commercial enterprise. The likely numbers of people in the handicapped population who would be capable of such a placement varies. For some, the primary candidates are those with a diagnosis of mild mental retardation (Brolin, 1976) however as it has been pointed out, the major obstacle to the placement of people in the lower ranges of measured cognitive functioning, the moderate, severe and profoundly handicapped, has largely been the lack of suitable training methods, and a disinclination to accept their employability outside the sheltered workshop (Goldstein, 1971).

This unoptimist attitude about the moderately and severely retarded's ability to retain an unsheltered job may well vary between countries. Brolin (1976) reports the surprise of an American visiting Britain on observing an individual with an IQ at the lower end of the moderately retarded range, working efficiently in a factory.

The relative neglect of the moderate, severe and profoundly handicapped in relation to vocational preparation may be due to two related factors. It has been estimated (Craft, 1979), that people with a diagnosis of mild mental retardation comprise approximately 89 percent of the handicapped population (3 percent of the normal population). This means that the other levels of handicap contribute only 11 percent. Thus there are relatively low numbers of people in this group with which to do research into such things as the type of instruction best suited to their learning abilities.

The second problem is the higher likelihood of an associated physical handicap, so that often the educator is dealing with someone presenting with multihandicaps. Some of these additional complications such as cerebral palsy affect the coordination of the person to a varying extent. Heber (1964) asserts that people with pronounced central nervous system pathology often score an IQ below 50 on intelligence tests, tend to function as 'trainable or less at school' and have accompanying physical problems.

There is then, the scarcity of research and the high probability of an accompanying physical problem to surmount before considering instructional programs.

Securing an unsheltered vocational placement can be considered to be a meaningful step towards normalisation. There are, however, some hazards associated with this achievement. If for example, a job is secured in an isolated rural area that demands that the trainee 'live-in' then the question should be raised about how useful this job would be overall, given that the isolating effects of the placement may interfere with the development of appropriate social skills (Wolfensberger, 1972).

Jobs such as those mentioned may in fact reduce the amount of community interaction and remove the individual from possible sources of integration, like social activities, exposure to peers and friends, and general opportunities to participate in community oriented activities. It would appear that professionals responsible for obtaining employment for intellectually handicapped people, need to be discriminating in their choice of jobs and must consider other factors such as whether the job in question is liable to facilitate an increase in the level of integration of the client both in general terms of geographical and social integration, and specific areas, such as how much contact with the handicapped person have with his or her co-workers and what attitudes these co-workers hold about having handicapped people working with them. It may be that to ensure an adequate level of satisfaction by all parties concerned in a new placement, an initially large involvement by ancillary support services will be needed, for example education of co-workers about intellectual handicap to reduce prejudices, or counseling to reduce the stress from a possible abrupt change from the sheltered, to non-sheltered environment.

While placement in a non-sheltered job is the logical conclusion to the training theoretically done by the sheltered facilities (Sigler and Kokaska, 1971) it is by no means an automatic occurrence. The present economic climate makes it difficult to find jobs for all sectors of the population although Halpern (1973) found that overall, mentally retarded persons who are assisted by well-structured vocational training programs have a good chance of finding jobs, regardless of the level of general unemployment. Given that the mentally handicapped can find a job, though, it appears that the overall prognosis is still not totally favourable, and there is a high rate of termination

of employment. The American statistics available, reveal that a study, by the President's Committee (1967), on the mentally retarded as laundry workers reported a 36 percent drop-out rate, and for a program run by the National Association for Retarded Citizens on people employed in service occupations a 34 percent termination rate in the first ten weeks of employment. However there are some favourable indications, again from American sources. Of the 5,000 mentally handicapped people employed by the government, only 7 percent have left (Brolin, 1976). In all cases of termination of employment mentioned, the primary reason for leaving falls in the general category of 'failure to adjust'. Neither can the high percentage of failures be explained by appealing to the unemployment rate in the general population. Tobias (1970) found that in a population that had an overall rate of unemployment of 3-4%, 4% of handicapped males, and 71% of females were unemployed. It would appear that some factor, distinct from the level of general unemployment is contributing to this relatively high rate and that part of this factor may be an adjustment problem. There are two readily identifiable areas of potential maladjustment in any vocational setting, briefly, they are 1) the ability to perform the task required and 2) the ability to take supervision, interact meaningfully and appropriately with the co-workers, that is, a social component. Kelly and Simon (1969) in a survey of supervisory personnel, revealed that when properly placed, the majority of retarded workers perform tasks assigned to them as efficiently and as rapidly as non-retarded.

So it seems that the vocational component, while important, can be mastered if the abilities of the individual are carefully considered during placement. Whereas it seems almost universally accepted that intellectually handicapped people need instruction and training in the area of vocational skills, for example, neatness, accuracy and recognition of tools, the social area of a vocational placement has only comparatively recently been acknowledged as needing similar attention and formalised training. Brolin (1976) states, that the development of an adequate degree of social skills and maturity is one of the most important goals for the mentally retarded and that assessment of these skills is a vital part of the vocational evaluation process. This necessity is being reflected in most assessment instruments such as the Adaptive Behaviour Scale (Fogelman, 1974) or the Adaptive Functioning Index (Marlett, 1971). These two instruments make it relatively easy

to identify areas of deficit and imply the need for training.

The proliferation of instruments for measuring vocational behaviour in recent years does not mean that there was no interest in the area previously. Eagle (1967) reviewed 36 follow-up studies of handicapped people released from state institutions (7,436 individuals) 39.6 percent of whom 'failed' in their placement and were reinstitutionalised. Vocational success was examined in a number of the studies reviewed by Eagle (1967) but at that stage, it does not appear that vocational success was functionally differentiated from success in, for example, living in a hostel or group home, indeed, it appears that for a number of researchers at this time failure in one area automatically precluded success in another. There were at the same time, some people interested solely in vocational success (as opposed to an area like residential acceptability) who were interested in what sort of predictive criteria could be used for selecting developmentally disabled people for unsheltered employment. In a summary article, Mahoney (1976), examined 17 studies from as early as 1927 to 1971 which were directly concerned with number of people achieving 'success' in open employment. Immediately one encounters the primary problem with studies of this nature specifically, the wide variety of criteria used to define success. Just in the research examined by Mahoney (1976) the criteria ranged from some employment since leaving school (Eagle, 1954) to employment for at least a year (Goldstein, 1962), to total independence and self supporting (O'Conner, 1964) or even marriage (for females) at the time of the study (Engle, 1954). Even though the publication dates of the studies cited vary widely, the variation in the definition of success cannot be wholly attributed to changes in definition of success by society as the extreme examples given were not at opposite ends of the publication date range. Some studies, it would appear adopt an arbitrary definition of success, as a means of easily identifying subjects rather than a more rigorous criteria which may have entailed a wider search.

A review of the literature reveals that while the limitations of such a simple dichotomy of employment versus unemployment as a success criteria have been recognised (Mahoney, 1976; Eagle, 1967; Song and Song, 1969; Kolstoe and Shafter, 1961) few, if any moves have been made to try to remedy the situation. Indeed, Mahoney (1976) continued to report the use of the dichotomy approach in studies done in the

1970's (Chaffin et al., 1971).

An obvious limitation of using an arbitrary definition such as the previously mentioned one, is that it does not distinguish between those people who have had considerable time in a non-sheltered job, and those who have had minimal exposure. It would be possible, using the strict dichotomy, to have a person in the successful group who had started the job the day of the study. Clearly the individual would not have had time to fail if indeed failure was going to occur. This is supported when work by Appell, Williams and Fishel (1965) is examined. They found that the ability to hold a job for six months, is a better criterion of success than the ability to hold a job initially.

As well as suffering from the limitations noted, some studies (Chaffin et al. 1971; Kennedy, 1948) have included in their sample, people who are working in part-time or temporary, short-term jobs. This introduces another possible variable in that a level of performance, in either vocational or social areas, that is acceptable for one or two days a week part-time or even full time if the individual is not a permanent employee may not be acceptable from the handicapped person if he or she was to be permanently employed or given a full-time position. This may be particularly true if the employer has given a job to a handicapped person because of a 'social-conscience', that is, as a form of charity for the employee who may be looked on by their fellow workers as someone to be tolerated rather than truly integrated in the work place. Thus, studies with part-time or temporarily employed subjects may be introducing confounding variables into their research, so making it difficult to produce reliable results.

It has been mentioned that some researchers have recognised the necessity for a criteria including a period of time to allow for failure to occur however this characteristic has not been systematically investigated to find the most powerful length of time to use in distinguishing between successful and not successful categorisations. This omission has produced a similar situation to that encountered with the dichotomous approach, that is, there are now a number of studies with conflicting data but, because of the variations in time period used, may have essentially incomparable results. For example, Song and Song (1969) used a time period of two weeks employment for success. Their results

suggested a multiple predictor factor which included intellectual and work habit variables whereas Fulton (1975) had only one variable show a statistically significant difference, that of presence/absence of a secondary emotional disability. Fulton used a six-month full-time, success criteria. Clearly, it is difficult to compare these results meaningfully because of the different criteria used. There does appear to be a strong case for a time period to be a component of success criteria. Wolfensberger (1967) has noted five common errors of job placement: " 1) placement when the trainee is not yet emotional prepared, 2) insufficient briefing and training for a specific job, 3) inadequate communication with the supervisor about the characteristics of the retarded individual 4) inadequate attention to details such as transportation", and 5) premature withdrawal of support services for the trainee. Each of these possible errors will take some time to be felt to the extent that it requires termination of employment status.

It was mentioned earlier that the placement of a trainee in an unsheltered position was a tool in the process of normalisation. However, this can only be so if the job functions as more than a place to work (Nirje, 1970). Ideally its facilitative effect will extend to other areas of the trainee's life, particularly their ability to use the surrounding community to expand their experience of the society they will be living in. The assumption that will be made in this study will be that someone integrated into society will have a greater knowledge of the potential services and facilities it provides, and, that working in a society will be a more integrating experience than working in a sheltered workshop where often, despite the best efforts of staff, the trainees have a minimal exposure to the community. Hence, by assessing the community awareness of a trainee, a measure will be taken of their integration. Obviously there is the danger here of measuring theoretical rather than practical knowledge of the community particularly of those people within the workshop who may be getting a formalised training program in community facilities or similar. Generalisation of learned material is not as automatic in the developmentally disabled, as it is in the general population.

There has been identified then, a number of areas in which success can occur. To recapitulate briefly, these are 1) to demonstrate

the level of vocational competence necessary to be placed into a competitive job, 2) to maintain this level over an extended period of time, 3) to demonstrate an on-the-job ability to perform the duties assigned, 4) to demonstrate an ability to interact with other people in an adaptive way, and 5) to be able to use the surrounding community as needed.

In consideration of the preceding discussion, the following criteria for selection of subjects were selected.

#### Definition of Successful

1. For inclusion in the successful group, the person will have been in continuous employment for a period of at least six months preceding this study, in an unsheltered commercial enterprise. Employment must have been on a full-time, permanent basis. There must be no indications that the job is about to end (such as requests from employer or employee for termination of placement).

To compensate for the difficulty in job availability, because of the current economic climate, which may result in some trainees being ready for unsheltered placement, but having nowhere to go, the possibility of including trainees from the Workshops will be provided for.

2. People still attending the Workshops will be included in the successful group, if, when provided with a list of trainees attending the facility, any individual is identified by 80 percent or more of their supervisors, as ready for unsheltered employment. The sole reason for them still being at the Workshop is the lack of an available placement.

#### Definition of Unsuccessful

For inclusion in the unsuccessful group subjects will meet one of the following criteria.

1. Having been secured an unsheltered permanent, full-time job, but, because of various reasons (other than redundancy which is essentially not controllable by employees) has returned to sheltered employment and is not about to be placed in another unsheltered position until

further training is completed.

2. When supervisors are provided with a list of people attending their facility any trainee indicated as being capable of the standards usually used to determine progression to unsheltered jobs, but at present being unsuitable for placement because of one or more current skill deficits. This process will theoretically identify those people most likely to have experienced precipitate placement (see page 17) if there was a surplus of jobs available. If sufficient subjects are identified in 1) above however, this process will not be used.

Having selected the subjects, it will be necessary to gather data in areas that will be of some value, in a way that is maximally efficient. The next section examines the selection of instrumentation.

## Instrumentation

From the preceding review of the area, it becomes apparent that while there has been quite a reasonable amount of data generated, its utility is reduced due to a general lack of co-ordination of emphasis. This deficit is particularly obvious in definitions of success and the selection of subjects. At present, researchers can be reasonably sure of what not to examine (for example, many biographical factors, (Mahoney, 1976) and what areas that seem to have the potential to warrant further exploration such as measures of social competence, (Mahoney, 1976) and vocational performance (Rosen, Kivitz, Clark and Floor, 1970).

With the above comments in mind, the emphasis of this study is to try to isolate some of the more promising variables used in previous research and to endeavour to measure them with a degree of objectivity that will permit some tentative conclusions to be drawn on their probable predictive validity for intellectually handicapped people who are candidates for unsheltered employment.

Three general classes of variables will be examined these are 1) Biographical, 2) Social and 3) Vocational. Even though biographical details have been generally shown to have poor predictive validity, in most studies that have examined them, (Cobb, 1972), there are isolated reports of these factors utility (Ward et al. 1981; Windle, 1962). To reject them at this point in a developing area may be to omit useful information. In addition to the previous reason, biographical or demographic data will enable the description of the Subjects. This will be necessary because, as with any industrial enterprise, the people working in the workshops and unsheltered employment will come from a variety of backgrounds that is, there is no specific area of the general population that the mentally handicapped as a group come from in terms of socio-economic or other category. Hence, it is necessary to provide a general description of population sample used.

The following biographical variables were chosen, not only to enable the description of the subjects but also, where possible because they have been identified as significant in previous studies, (examined later). They are, age, sex, years of schooling prior to joining the Workshop (or starting work if no workshop was attended), presence of

a secondary handicapping condition, residential situation, time spent in workshop before being placed in a job; and verbal, performance and full scale IQ on the Wechsler Adult Intelligence Scale.

### Discussion of Biographical Category

#### Age

Age has been found to significantly discriminate between successful and unsuccessful outcomes of a work preparation program, (Ward, Parmenter, Riches and Hauritz, 1981) however others interested in this area for example, McKerracher and Orritt (1972) found that there were no effects for age alone. However, they did find that age had an effect on measured intelligence in that older subjects showed a higher ability in the tests requiring use of memory, (e.g. Comprehension of the W.A.I.S.) but a poorer score on performance tasks (e.g. Block Design of the W.A.I.S.). It appears then that what may be occurring is an interaction between age, sex, length of training period, and level of cognitive functioning, all of these have been significant in some studies. Certainly, the data from McKerracher and Orritt (1972) add some weight to this idea. They found that for a shorter training period, females earned more vocational training credits than males. More importantly, it was found that trainees older than 23 years on entry to the training institute required a shorter training period prior to employment success. The results of Ward et al. (1981) suggest that people with a longer training period were more likely to be successful in an unsheltered situation however, it could be that not only the length of training should be examined, but also the type. It seems logical that by increasing the length of training, the trainee is given a greater opportunity to learn the skills desired, but in some cases, no amount of training will compensate, if the way in which the skills are being taught is inadequate. On the other hand, a competent approach to the development of skills, employing knowledge of learning difficulties the intellectually handicapped have must accelerate the learning process and decrease the training period. On examining the literature, it does not appear that any attempt has been made to control for effectiveness of training. Admittedly it would be difficult to try to quantify the quality of training.

## Sex

Sex of the subject as a variable has been difficult to isolate as there is a tendency for more males than females to be in open employment. It has been suggested that this state reflects the nature of the jobs available for intellectually handicapped people in the community in that they involve heavy manual work or have duties that are traditionally seen as male occupations. This suggestion is at least partially substantiated by Mahoney (1976b) who agreed that the usual job undertaken by the mentally retarded is typically described as semi-skilled or unskilled (hence implying a manual component). From this survey of Special Schools in greater Metropolitan area of Melbourne by far the greater number of his subjects were male (104 out of 170). Of all subjects 92 percent had jobs which were classified as "Trades, Process Production and Labouring areas." This result, seems to reflect the concern of Brolin and Kokaska (1974) when they described the range of jobs available to the handicapped person as 'restricted'. Previously, however, Brolin (1972) has suggested, as a result of research into correlates of vocational success, that for females, success is a function of more factors than for males, and that in future more helpful data could be isolated by analysing results for each sex separately. It was also suggested though that there are indications that agencies may tend to serve male more readily than female clients. In contrast to this suggestion is the work by McKerracher and Orritt (1972) who on analysing data on 75 developmentally handicapped trainees found that males had a poorer prognosis than females, in terms of credits earned for vocational performance. Irrespective of length of exposure to training, males were slower to acquire vocational and social skills than females. This result however, was found in association with the fact that males were placed significantly more frequently in work areas that required a greater degree of mechanical ability and more complex manipulative dexterity.

## Cognitive Functioning

Perhaps the greatest debate in this group of factors concerns the utility of IQ as a predictor of vocational functioning. This problem, though is not confined to prediction with the intellectually handicapped population. The W.A.I.S. has been used to try to predict

'success' of low-average high school students (Goldstein and Lundy, 1961) and of academic achievement in a residential school for the blind (Streitfield and Avery, 1968). All of these attempts have been unsuccessful and has prompted Burnstein (1977) to suggest that multiple factors including non-intellectual ones should be evaluated in such predictions. In studies with developmentally disabled subjects, Ward et al. (1981) and Kaufman (1970), found the W.A.I.S. full scale IQ was one of the variables most discriminating between groups, whereas McKerracher and Orritt (1972) found that IQ was a separate factor, not related to vocational performance, and went so far as to say the IQ does not seem a useful predictor of vocational performance. In this, they agree with the opinions of Sali and Amir (1971). Rosen et al. (1970) has pointed out that a higher performance IQ than verbal IQ is associated with a higher salary than those with an inverse relationship i.e. higher verbal than performance score. This result may well reflect the requirements of the jobs, given that the majority of placements are in jobs that require manual skill rather than conceptual ability. Related to this, Song and Song (1969) found that while there was no relation to verbal, performance or full scale IQ, trainees with a better job efficiency had a poorer score on the W.A.I.S. Information, Comprehension and Similarities subtests, all of which measure verbal ability. While there appears to be some agreement here, Ohwaki (1974) produced results that found W.A.I.S. verbal comprehension and arithmetic discriminated between employed and unemployed mentally retarded people, with the successful group scoring higher. The area is made further uncertain if research by Wagner and Hawyer (1965) is considered. Their results implied that for people with a 'low' measured IQ, intelligence tests seem to be highly correlated with performance on vocational criteria. However, they did use tests, of essentially manipulative dexterity, for example, the Minnesota Rate of Manipulation Turning Test, and success or not was determined by ratings of a supervisor in the Workshop. It may be that IQ is important only with those jobs above a certain complexity level. Song and Song (1969) have asserted that IQ becomes important only when the level of intelligence needed by the job is 'radically greater' than the IQ of the Subject studied. This concurs with an earlier proposition by Kolstoe (1961). He stated that an IQ of above about 40 no longer interferes with the employability of mentally retarded people. Implying that intelligence somehow becomes redundant above a lower limit.

One possible source of error, that has not been widely acknowledged in the literature is the possibility that the W.A.I.S. becomes unreliable at the extremes of its measurement range, which is where by definition, the mentally retarded person scores on IQ tests. Certainly, tests are most valid and reliable for those people close to the population mean (Anastasi; 1976). The studies mentioned have all used the W.A.I.S. with people scoring below two standard deviations from the mean. The reliability of the W.A.I.S. with mentally handicapped people is not well documented. In the one study that was found (Dinning, Andert and Hustak, 1977) which explored this area the results suggested that the test-retest reliability of the W.A.I.S. was high (coefficient was .90). The population used in this study were institutionalised, and so it is impossible to estimate the effect the environment of the institution had on the subjects.

With the abundance of contradictory evidence about the reliability of standardised tests of intelligence, it seems advisable to include the W.A.I.S. in the measures used. To omit it may be to lose pertinent information.

### Secondary Handicap

The presence of a secondary handicap (conditions such as epilepsy, and cerebral palsy) and its effect of vocational adequacy has not been explored consistently. In the studies found, it has been assessed as either increasing the probability of unemployment (Collman and Newlyn, 1967; Fulton, 1977) or to have apparently no effect (Mahoney, 1976). Thus, from this small sample of three studies, it appears that it certainly does not aid the employability of intellectually handicapped people and may have a deleterious effect.

### Residential Placement

The residential placement of the person in open employment has also been described as important (Ward et al. 1981) in that if living at home with both parents, the trainee may have access to better support than, for instance, one who is living on their own or supervised by others. Alternatively, it could be that better support may be available to those in a Hostel situation due to the presence of trained staff.

caused to those individuals, particularly those in unsheltered work by being identified as different at the workplace. Associated with this, is the fact that some jobs performed by those in unsheltered positions are not easy to observe for protracted periods because of their nature, for example a highly mobile job such as road repair. The second is the amount of time it would take to gather a reasonable sample of 'work behaviour' for each person thus multiplying the amount of work entailed for possibly minimally valuable data. The third point relates to the second, and is the possibility of observing during an atypical or biased period of time, that is, when the person being observed is not behaving as they usually do hence unwittingly producing unreliable results. Considering these restrictions it was decided to use behaviourally based checklists or easily administered tests with the subjects. It was felt that the use of this sort of measure would enable the data to be based on a wide a sample of behaviour as possible. The instruments to be used are 1) The 'Social Maturity' subscale of the Residential Checklist; 2) the 'Communications' checklist and 3) the 'Community Awareness' subtest of the Social Education Test 4) a checklist designed to measure the appropriateness of the self-directed behaviour of the subject and 5) a standardised test of linguistic competence. The Residential Checklist and the Social Education Test are both part of the Adaptive Functioning Index (A.F.I.) (Marlett, 1971).

#### Discussion of Social Category

On examining the literature, the initial task appears to be to make a distinction between work that has been concerned with 'personality' factors and studies concerned with 'social' factors. As Windle (1962) has pointed out, the category of personality has been used as an explanatory crutch, similar to the concept of the soul, and is somewhat ephemeral in nature. Social ability, however, is inherently a more useful categorisation implying as it does, essentially observable nature of the phenomenon (Trower, Bryant and Argyle, 1978). While personality may be an internal process, for example a trait, social ability directly implies a performance component (Trower et al. 1978). Occasionally the two become confused as with Warren's study (1960) who has appeared to measure social ability rather than personality, however, probably the major distinguishing characteristic of the two is the ability to teach each. As it has a performance component it is possible

Although, from some perspectives, it would seem that there is no difference in terms of quality of life between those handicapped people in an institution, in a hostel or living at home (Webb and McMickle (1982)). Another component in the importance of the residential environment is that of the development of a 'work personality' as proposed by Brolin (1976).

There are a number of theories concerning the development of a work personality in the mentally handicapped person and these are summarised and reviewed in Brolin (1976). One of the more promising of the theories is the Minnesota Theory of Work Adjustment (Dawis, Lofquist and Weiss, 1968). Their theory has as its premise that successful vocational adjustment depends on the congruence between an individual's work personality, and his work environment. They propose, as one of the prerequisites of the development of the work personality, a supportive environment. They view the early childhood experiences and relationships, together with the provision of positive reinforcement as critical in the successful differentiation of the Work Personality. Probably for these reasons they assert that the parents of mentally retarded people have a crucial role to play in the future 'success' of their children. Recent research by Krauss and Mac Eachron (1982) who were specifically interested in the validity of this theory, provides evidence to support the importance of a reinforcing environment for the retarded worker.

From the preceding discussion then, it is difficult to determine the value of biographical factors. It may be that this sort of variable will discriminate most powerfully in association with others rather than alone, there being some form of interaction that is more far reaching than each of the variables taken alone will show.

### Social Factors

The second area of interest, that of the social concomitants of 'success' or 'non-success', also has difficulties associated with it. Obviously the most realistic way to determine social competence would be to observe the individual within their work environment. For the study at hand, though, this method has a number of limitations. The first is of a social nature, and is the possible embarrassment

to teach social ability (or social skills as it commonly called). Indeed considerable time has been spent doing just that, particularly with psychiatric patients (Argyle, Bryant and Trower, 1974) and more recently with mentally handicapped people (Riches, 1980).

A second distinction must now be drawn within the social skills category, as different studies have grouped various competencies under the rubric of social skills. For some (Marlett, 1971) social competence includes such things as the ability to prepare simple meals, go to the bank on one's own and recognise certain every day words. This is social ability in its widest form. However the type of social ability under investigation in this study stresses the social, that is, interpersonal, component.

While the importance of the various dimensions of social skills has been acknowledged, unfortunately the paucity of reliable, valid instrumentation has not facilitated their study, also, the confusion surrounding what social ability is, and how it is best examined, has resulted in a proliferation of instrumentation of varying quality. Walls and Werner (1979) aptly illustrate this confusion. They were able to examine 39 behaviour checklists all purporting to measure vocational behaviour and all including some measure of social 'on-the-job' ability. It is reasonable, then to say that a vocational setting is recognised also as a social setting and that satisfactory social performance is necessary for vocational adequacy.

The instrument used for this part of the present study was designed to be used in research and in the manual, has been described as sensitive in both demographic and program research (Marlett, 1977). This assertion was supported by Riches (1980) who used the Social Maturity subscale to demonstrate the effectiveness of a social skills training program. The scale distinguished significantly between those subjects who had and had not received instruction in social skills. All items in the A.F.I. checklists have met an inter-rates reliability significance better than the 0.05 level. Specific reliability estimates reported are, for the Communication checklist, test-retest .85; and for Community Awareness test: test-retest of .97. This result suggests that the criteria provided are reasonably specific and objective.

Community awareness was selected to be measured because of its face validity to measure the success of the individual's integration with the community, that is, successful implies, at its basis, knowledge of the resources and information that the community can provide. This knowledge will enable the person to 'use' the society to their own advantage (or at least prevent their disadvantage) and hence obviate the need for support services, with the attendant loss of independence, and breakdown of the normalisation aim (Wolfensberger, 1972). The A.F.I. is a Canadian publication and as such is not totally applicable to a New Zealand setting, particularly in something as geographically variable as the Community therefore minor changes have been made. These alterations are specified in the section on 'Method'.

The rating scale on self directed behaviour was adopted from a scale used by Ryba (1976) who in turn had adopted the format from work by Beller (1957). The revision was undertaken to clarify the distinction between necessary and inappropriate interaction with the individual's co-workers. For example, from the item 'How often does the individual seek help?', which would include both appropriate (seeking supervision to improve work performance) and unnecessary, (asking someone to get materials for them when the individual already knows where the required items are stored), attempts to gain help. The distinction was drawn closely approximating the parenthesised examples shown. Although the results of Ryba's (1976) research using this scale were mainly nonsignificant it was felt that the utility of this instrument may be improved by making the noted distinctions. The second part of the scale, that which measures dependency largely remains unchanged. The definitions used in the scale were screened for jargon and where possible, this was rephrased (see Appendix H. for Questionnaire).

The checklists used will provide data on a broad range of social competencies, however additional information will be gathered on linguistic functioning by using selected subtests of the Illinois Test of Psycholinguistic Abilities (I.T.P.A.). This will be more directly sampled data (rather than relying on the examiners impression of the subjects' lingual performance). Previous work in the area of vocational achievement and psycholinguistic functioning by Feister and Giambra (1972) has found a positive relationship. This result was refined somewhat by Malgady, Barcher, Towner and Davis (1982) when they examined

patterns of language behaviour and its effect on job placement. Briefly, they found the two dimensions of language skills were contributing to an increased probability of job termination. These were poor 'verbal manners' and communication skills. The I.T.P.A. subtests used measure receptive and expressive language ability. Those omitted were done so because they purported to measure different skills.

Early work by Gunzburg (1964) has established that the I.T.P.A. is sufficiently discriminatory to be usable with the population of mentally retarded adults. Gunzburg (1964) did suggest that subtest numbers seven and one (Auditory Perception and Visual Closure respectively) may be too simple for the handicapped adult, however, he was in this case mainly talking about subjects with an IQ range between 70-85. Such an IQ score no longer attracts an 'intellectually handicapped' classification, whereas he found the discriminatory power acceptable for those that fall within the 20-70 IQ range.

#### Discussion of Vocational Factors

The third class of factors is that of vocational performance. To measure this, the Vocational Checklist of the Adaptive Functioning Index (Marlett, 1972) will be used. Also in this area, although not as global a measure, will be an assessment using the Purdue Pegboard.

The use of manipulative dexterity tests to predict vocational performance in any worker seems to be rather controversial at present. The demise of the specific test (such as the Purdue) has seen the direct result of the rise of its main competitor, the job sample. Whereas the performance tests are based on the assumption that there is a general ability of 'vocational skill' of which they measure an adequate, predictive sample, the proponents of the job sample deny this. They assert the only good predictor of the chances of performing a job adequately is a sample of the skills required to do the job at hand. (Down, 1977).

Within the realms of workers in the field of mental retardation, the job sample has not met with universal acclaim. As recently as 1981, Irvin, Gersten, Taylor, Close and Bellamy have pointed out that the concern of the Halpern (1978) has not yet been resolved. Specifically,

that the demonstration of the work sample assessment has not yet been established for use with mildly retarded individuals. This may be difficult to do, considering that the criterion behaviour they endeavour to predict, that of ultimate level of productivity, may not be the most appropriate criterion, especially in the light of accumulating evidence of the effects of task and situation influence on both learning and productivity of the retarded person. Timmerman and Doctor (1974) have also expressed doubts about the value of work samples. They concentrate their criticisms on the lack of validation on the mentally handicapped population and the widespread absence of standardisation of work samples.

Notwithstanding these criticisms there are a number of reasons used to justify job samples. The first is that they assess the same skills, aptitudes and abilities required by competitive employment (Stodden, Casale and Schwartz, 1977). Also, that they are much like real work situations thus the client views himself completing a work task rather than a test (Hoffman, 1970). However Timmerman and Doctor (1974) comment that many job characteristics cannot be duplicated in work samples. Another reason in favour is that work samples are much less affected than standardised tests by factors such as excessive anxiety and speech and hearing deficiencies (Hardy and Cull, 1973).

The Purdue Pegboard is described by Brodin (1976) as quick and easy to administer, and because reading ability is not required, it is useful for assessing the retarded person (p101). Indeed Tobias and Gorelick (1960) found the Purdue Pegboard to be a more effective predictor of the productive efficiency of the retarded than of normal individual. More importantly, Overs (1970) remarked that standardised tests of manual dexterity predict as well as or better than, job sample tasks and may be administered in a much shorter time. Perhaps one of the more striking pieces of evidence about the utility of the Purdue Pegboard comes from the work by Shulman (1967). His research produced a correlation of .70 between the Purdue in Year 1 of training and an employability index in Year 3. The Purdue accounted for 48 percent of variance, and the addition of another nine variables (unstated) together added only a further 10 percent to the explained variance.

Despite the generally optimistic opinions expressed for such tests, the Purdue Pegboard has been an inconsistent performer. Ward

et al. (1981) found no significance in the performance of successful and unsuccessful trainees. Brolin (1972) had isolated success, and Schreiner (1978) and Rosen et al. (1970) had a significant correlation between it and 'success'. It would appear appropriate to further explore the viability of such a test.

Part of the value of using the vocational checklist of the A.F.I. is its ability to quantify the type of task performed by complexity. This ability will hopefully satisfy the concern expressed by Song and Song (1969). Kolstoe and Shafter (1961) saw a need for some classification of the complexity of the task performed. They felt that this would have an effect on the level of cognitive functioning required for success. They also felt it would influence other (unspecified) areas. This particular checklist should also be able to support the summary of Mahoney (1976) who said that retarded adults perform at adequate levels in the areas of absenteeism, accident/safety awareness, and work quality.

It can be seen then, that a reasonably broad sample of behaviour will be sampled. The actual techniques and procedures used to do this will be covered in the next chapter.

## Hypotheses

In consideration of the preceeding discussion, and the primarily descriptive nature of the present study, the following research questions and attendant hypotheses were generated.

1. Is superior achievement on verbal, performance or full scale IQ associated with a particular group of trainees, either successful or non-successful?
  - 1:1 That successful people will have a higher level of cognitive functioning as measured on standardised test of intelligence.
2. Does lingual competence appear to be important in the ability to maintain open employment?
  - 2:1 That successful people will display a higher level of functioning on an assessment of receptive language.
  - 2:2 That successful people will display a higher level of ability on an assessment of expressive language.
  - 2:3 That people in open employment will be rated higher on a checklist designed to assess communication ability.
3. To what extent, if any, is motor co-ordination associated with success in open employment?
  - 3:1 That successful people will display superior performance on a simple test of manipulative and assembly skills.
4. Is competence in social areas an important influence in the probability of success for the mentally retarded person?
  - 4:1 That successful people will display a higher level of functioning on a checklist of social maturity.
  - 4:2 That successful people will be described by their supervisor as more able to make judgements on the quality of their work and seek assistance when required.

5. Can vocational placement be regarded as having a facilitative effect on knowledge of the Community?
  - 5:1 That successful subjects will demonstrate a higher level of community awareness as measured by a test and checklist of community awareness.
  
6. What vocational performance variables are associated with employment in the community?
  - 6:1 That successful people will earn more credits than non-successful on a checklist of vocational performance.
  - 6:2 That successful people will earn fewer credits than non-successful on a checklist of problems associated with their vocational performance.

While data on biographical factors will be gathered, no specific hypotheses are held with respect to these. Information in this area will be treated as additional or supplementary data.

## CHAPTER 3

### Method

#### Subjects

Thirty-six subjects, (18 successful, 18 non-successful) were selected from those developmentally disabled people in contact with the Manawatu Branch of the New Zealand Society for the Intellectually Handicapped (IHC).

#### Success Group

Those people in the success were selected according to the criteria previously defined, and were identified by consulting the supervisor that liases with trainees in outside employment. An initial group of 23 people, all of whom were working 5 days a week, was compiled, and an introductory letter sent to the employer concerned (see Appendix A for letter). Of these 23, two were eliminated because of employer resistance to the proposed visit. One subject was on night shift and hence unavailable during the day; another was rejected because he was no longer classified as intellectually handicapped, and had minimal contact with the Society. Three subjects refused to participate when approached by the experimenter. Job loss immediately prior to assessment resulted in a further two prospective subjects being rejected. These eliminations left a group of 14.

Workshop supervisors were then asked to nominate those trainees still attending their facility for whom it was felt that unsheltered employment was immediately viable, The instructions for this selection process is given in Appendix B. People who were currently employed in a part-time capacity were eliminated from this selection process because of their possibly confounding effects noted in Chapter 1.

Any trainee that was nominated by 80% or more of the total number of supervisors in their Workshop was included in this group. Of the 126 trainees attending the Workshops 4 reached criterion level.

### Non-successful Group

Trainees for this group were not as readily identifiable. Lists of people that were thought to have had jobs were elicited from the facility managers. The trainees on the lists were consulted to see if they had in fact had a job and to make doubly sure of selecting appropriate groups the IHC files were examined to clarify the subject group. At this stage, it was found that two trainees had lost their jobs because of redundancy and so were not included in the group. This procedure yielded 15 people. Concurrently, Workshop supervisors were asked to do a similar exercise as that used to select supplementary subjects for the successful group. (see Appendix C for instructions to supervisors). This time however, they were asked to nominate trainees who could be expected to leave the Workshop in the future, but who at the present time were having difficulties in one or more areas, so that they were not considered eligible for unsheltered employment at the present time. An additional three subjects were selected in this manner.

### Description of Subjects

Descriptive data for each of the groups is set out in tabular form, Table 1 showing the mean age, W.A.I.S. IQ, and years of formal schooling together with the respective ranges. Table 2 shows the incidence of a secondary handicap for each group, and Table 3, the various residential situations of the subjects. There were 12 males and 6 females in the successful group, but 6 males and 12 females in the non-successful group.

While it was possible for subjects to have more than one secondary handicap (e.g. cerebral palsy associated with epilepsy) this did not occur for any subject. Also, the number of parents living at home was recorded whether or not the subject was in regular contact with them. This data appears in Table 4. Further details and demographic data about the subjects is presented in the next chapter, Results.

### Materials

The Wechsler Adult Intelligence Scale (W.A.I.S.) was used to

measure the intellectual status of each subject. This was administered according to the manual. Likewise the Purdue Pegboard was used without altering the administration specified in the manual. However the option of giving three trials for each section was used as this multiple sampling of each item has been reported to increase the reliability (estimated by Spearman-Brown formula) from .60-.76, to between .82-.91 (Tiffin, 1948; Bass and Stucki, 1951). The Illinois Test of Psycholinguistic Abilities (I.T.P.A.) was abbreviated to five subtests. These were : Auditory Reception; Auditory Association; Grammatic Closure; Verbal Expression and Manual Expression. However, on using the Manual Expression subtest, it was found to appear to be such a juvenile task, as to embarrass the subjects and impede the assessment rapport so it was not used. The first three I.T.P.A. subtests were used to give a measure of receptive language, and the fourth, of expressive language. The subtests were administered in the order they appeared in the manual and no alterations were made to the procedure detailed there (Kirk, McCarthy and Kirk, 1968). The remaining subtests of the I.T.P.A. were not used because they did not purport to measure dimensions of expressive or receptive language which is of primary interest in this study (see earlier discussion, Chapter 2).

Two subtests of the A.F.I. Social Education Test were completed during the assessment interview. These were the Community Awareness and Communication scales. Modifications were made to the Community Awareness test to improve its validity for the New Zealand situation. These modifications were 1) Question 6 to read 'Which shape is used in Give Way signs?' (and the substitution of the appropriate shape for the triangle in the set of shapes provided for the answer). Question 11 to read 'How much does it cost to go to the pictures in town?' and 3) Question 15 to read 'What is your hourly pay rate?' Permission was given by the authoress of the A.F.I. in Canada to make these changes (Marlett, Note 1).

In addition to the preceding instruments, which were all administered by the experimenter, the Vocational Checklist, the 'Social Maturity' and 'Community Awareness' subscales of the Residential Checklist, together with the Self Directed Behaviour Questionnaire were given to the appropriate supervisors who subsequently used these to sample the behaviour and work performance of the individual subjects.

TABLE 1     Comparative Data for Successful and Non-  
successful Subjects showing Mean and Range

VARIABLE	GROUP	
	Success (Range)	Non-success (Range)
AGE	31 years 4 months (19-45 years)	26 years 9 months (19-45 years)
IQ	62.22 (42-84)	65.44 (48-91)
YEARS OF SCHOOLING	11 y. 4 m. (6-17 y.)	10 y. 6 m. (7-15 y.)

TABLE 2     Incidence of a Secondary Handicapping Condition  
in Successful and Non-successful Groupings

SECONDARY HANDICAP	GROUP	
	Success (%)	Non-success (%)
NONE PRESENT	14 (77-78)	9 (50.00)
EPILEPSY	2 (11.1)	5 (27.78)
DOWN'S SYNDROME	2 (11.1)	0 (0)
SCHIZOPHRENA	0 (0)	4 (22.23)

TABLE 3 Residential Status of Subjects in each Group

ACCOMMODATION TYPE	GROUP	
	Success (%)	Non-success (%)
WITH PARENTS	12 (66.67)	14 (77.78)
HOSTEL	2 (11.12)	0 (0)
RENTAL	4 (22.23)	2 (11.12)
FOSTER HOME	0 (0)	1 (5.5)
BOARDING	0 (0)	1 (5.5)

TABLE 4 Number of Parents Living at Home for each Group

NUMBER OF PARENTS	GROUP	
	Success (%)	Non-success (%)
2	15 (83.34)	14 (77.78)
1	1 (5.5)	4 (22.22)
0	2 (11.1)	0 (0)

The A.F.I. scales have been designed for use by personnel such as supervisors, and it has been demonstrated that it is possible to achieve quite reasonable levels of reliability with minimal amounts of training (Marlett, 1977).

Unlike the Residential Checklist and Social Education Test, the Vocational Checklist is divided into two totals for each section, a difficulty score, and an ability total so that for each performance area, an indication of where the individual is achieving and experiencing difficulties is obtained.

### Procedure

Preliminary contact was made by telephone with employers of the success group, to arrange a suitable time for the assessment to take place.

Visits were made accompanied by the supervisor provided by the IHC to maintain regular contact with people in competitive employment.

Initially, the manager of the company where the subject was placed was interviewed to once again briefly explain the purpose of the research, and to answer any questions. The manager was informed that the assessment would take about 90 minutes and that he was under no obligation to allow the assessment in company time. All of the employers were willing to supply a suitable room, and pay the subject for the necessary time away from their work while they participated in the assessment.

Following the employer interview, the individual subjects were seen, usually with the employer present. An effort was made to ensure comprehension of what the assessment was for, what it involved, and that the results would not be released to the IHC or their employer. As mentioned in the 'Subjects' section, three people at this stage declined the invitation to participate. These people were thanked for their time, and there was no further contact with them.

For those subjects that did agree to the assessment, the testing was done immediately following the interview. The order of administration of the tests was: W.A.I.S.; I.T.P.A.; Purdue Pegboard; and

the Community Awareness test. To control for any possible bias due to the order of administration, half the subjects in each group were tested in the reverse order. The Communication Checklist of the Social Education Test was completed by the examiner immediately the assessment was finished.

For subjects in the non-successful group, the procedure to obtain consent of each person used only the personal interview as each facility manager was aware of the reasons for the research.

Subjects from the Workshops were asked to take a short explanatory note home to their parents (see Appendix D) if living at home. This was not a consent form for the assessment to occur, but intended to inform parents that the people attending the Workshops may be included in some research being conducted in the Society facilities.

The appropriate supervisor of the facility (for non-successful) or worksite (for successful subjects) was asked complete the checklists mentioned previously. Included with each set of checklists were scoring criteria, extracted from the manual.

For supervisors from the IHC minimal instruction was necessary as they are all familiar with the instruments. The supervisors of those subjects in competitive employment however, were universally unfamiliar with the procedure of the A.F.I. and to ensure understanding of the method, three or four items were completed as practise items to demonstrate the procedure of completing the forms.

In all cases, the checklists were left with the respective supervisors and the experimenter returned a week later to collect the scales and sort out any difficulties. If necessary the supervisors were given a further week to complete them.

For some subjects (8), distance prevented a second visit and these supervisors were given a stamped, self-addressed envelope to return the completed forms.

The information gathered on demographic variables, was compiled by referring to the IHC Branch files and by consulting with IHC social

workers. The decision to record a secondary handicap was based on information available from these files, and for some such as 'schizophrenia', a current psychiatric diagnosis by a qualified professional had to be recorded.

## CHAPTER 4

### Results

#### Subjects

Although some of this information has been previously presented, (p 37 Tables 1,2 and 3) for the sake of completeness, it is elaborated here as it will ultimately effect interpretation of results.

Demographic data gathered for all subjects was examined to see if the groups could be considered matched. Only two demographic variables produced significant group differentiations these were; sex ( $\chi^2 = 4.0$ ,  $df = 1$ ,  $p < 0.05$ , see 'Method' page 2 for data), and the presence of a secondary handicap ( $\chi^2 = 4.5$ ,  $df = 1$ ,  $p < 0.05$ , see 'Method' Table 2).

#### Preliminary Analysis

Initially, the group means for each variable were compared using F-tests. Appendix E, Table 1, contains the means, standard deviations and F-statistic for each of the W.A.I.S. subtests, together with the results for Verbal, Performance, and Full Scale IQ. Only one subtest (Picture Completion) showed a significant difference. The results for each of the Purdue Pegboard scales, and the I.T.P.A. subtests did not reach significance (Appendix E Tables 2 and 3 respectively).

The data for the checklists on Social Maturity is presented in Table 5, and shows that only the 'Handling Problems' was significant ( $F(1,34) = 8.124$   $p < 0.05$ ). Two variables in the Community Awareness checklist (Table 6) were significant, these were Transportation ( $F(1,34) = 7.35$  ,  $p < 0.05$ ) and Cooking ( $F(1,34) = 5.661$ ,  $p < 0.05$ ).

The Vocational Checklist produced a number of significant Group results (Table 7). Significant subscales were the 'Difficulty' sections for Decisions ( $F(1,34) = 11.086$ ,  $p < 0.01$ ), for Speed of Work ( $F(1,34) = 4.630$ ,  $p < 0.05$ ), for Following Instructions ( $F(1,34) = 4.874$ ,  $p < 0.05$ ) and 'Total' scores for Following Instructions ( $F(1,34) = 5.859$  ,  $p < 0.05$ ), for the Skill Level rating ( $F(1,34) = 6.265$ ,  $p < 0.05$ ) and Task Analysis

Total ( $F(1,34) = 5.466, p < 0.05$ ). Also significant was the overall Difficulty score for the entire checklist ( $F(1,34) = 6.325, p < 0.05$ ).

Examination of the means for those with significant differences reveals that for eight of these, namely, Picture Completion, Cooking, the 'Following Instructions' total and the 'Task Analysis' total, the non-successful subjects scored higher than successful. On difficulty scores for Decision making, Speed of Work, Following Instructions, and overall Difficulty Total, successful subjects scored at a higher level, but these totals reflected increasing problems in the specified area with increasing scores.

These initial results prompted the consideration that other factors were influencing the results, and needed to be checked before a realistic interpretation of the results could be made. As indicated previously, the groups differed in terms of sex and secondary handicap and these will be examined in detail below. However, a further possibility is that the people completing the checklists for the individual success group subjects were not using them in the same manner as the non-success group supervisors. Various pieces of evidence run contrary to accepting the latter view. Firstly, the Pearson product moment correlation showed a high positive correlation between the Communication checklist, completed by the experimenter, and the Social Maturity 'Communication' subscale ( $r = .785, p < 0.0001$ ) and also with the 'Self-Expression' subscales of the Vocational Checklist ( $r = .770, p < 0.0001$ ), as completed by the two groups of supervisors. Nevertheless, it is still possible that the raters for the successful group may have used more of the scale than raters for the non-success group. Also, it may be the case, that the presence of the 'difficulty' categories on the checklists made it more likely that difficulties were reported, rather than the presence of difficulties per se. (Anastasi, 1976).

Another problem relates to the checklists, and the independence of each 'Difficulty' and 'Total' pair on the Vocational Checklist (Table 7, CHL14 to CHL38). Theoretically, the score on the 'Difficulty' scales would be negatively correlated with the 'Total' scores, which measures competence in the particular area. Any specific difficulty should, if it is relevant to the set of skills being examined, interfere with the ability to perform adequately in the area being rated. This

**TABLE 5** Group Means, Standard Deviations and F-statistic for Social Maturity Subscales

SOCIAL MATURITY SUBSCALES	GROUP				F
	SUCCESS		NON-SUCCESS		
	MEAN	S.D.	MEAN	S.D.	
Communication	16.33	4.41	17.22	2.49	0.556
Consideration	17.34	2.47	15.44	3.63	3.324
Getting Friends	16.61	4.16	17.72	3.03	0.839
Keeping Friends	13.89	5.04	13.94	2.69	0.006
Handling Problems	15.33	2.47	12.94	2.56	8.124*

\*  $p < 0.05, df = 1,34$

**TABLE 6** Group Means, Standard Deviations and F-statistic for Community Awareness Subscales

COMMUNITY AWARENESS SUBSCALES	GROUP				F
	SUCCESS		NON-SUCCESS		
	MEAN	S.D.	MEAN	S.D.	
Transportation	16.39	4.96	11.17	6.49	7.353*
Shopping	14.78	5.29	16.44	3.85	1.163
Leisure	14.28	3.72	13.33	3.144	0.677
Budgeting	9.83	5.36	11.78	4.58	1.368
Cooking	12.39	5.30	15.89	3.29	5.661*

\*  $p < 0.01, df = 1,34$

effect, if present, could lead to a loss of (or produce spurious) significant effects, if not controlled for in the analysis. This anticipated correlation, was present in only half of the ten pairs examined. These correlations appears in Appendix F.

To examine whether the results obtained from the afore-mentioned F-tests were due to the inexperience of the raters of the successful group in using the instruments and if it was possible to control for this, the successful group was temporarily sub-divided. The four subjects that had been included from the Workshops (rated by experienced raters) were compared with the remaining 14 (rated by novice raters), by using a frequency table for each checklist subscale and noting the distributions of the scores from the two groups (novice and experienced raters). Using this procedure, no systematic under or over estimation of the subject difficulties and/or competencies were apparent across the different 'success-group' raters. while the number of subjects was too small to permit significance tests to be used, this examination of the cross tabulation of 'rater by score usage' would have been sufficient to detect any large abnormalities which needed to be controlled for.

The final possible source of confounding discovered, was the presence, in the successful group, of people that had clearly inferior performance, and for who (apart from their work status) it became difficult to justify their 'successful' categorisation. This group of four, was characterised by high overall Difficulty total (CHL37) with low Skill Level (CHL27) and Job Competance (CHL26).

#### Primary Analysis

In effect, four potential source of error have been isolated and their influence, if any, explored during the analysis. These sources of suspected confounding of true group differences were: sex, secondary handicap, for CHL14 to CHL38 (Table 7) independence in the relationship between the 'Difficulty' and 'Total' scores and finally, the presence of the four anomalous subjects in the success group.

In this section therefore, group differences are examined by statistically controlling for these possibly confounding effects. For

**TABLE 7** Group Means, Standard Deviations and F-statistics for Vocational Checklist Subscales

Vocational Checklist Subscales			Group				F
			Success		Non-success		
			Mean	S.D.	Mean	S.D.	
Basic Work Habits	Independence.	CHL14	0.67	0.84	0.39	0.78	1.059
		CHL15	8.06	2.18	9.17	0.92	3.956
	Decisions	CHL16	1.33	1.24	0.28	0.58	11.09**
		CHL17	6.88	2.89	7.72	1.74	1.245
	Use of Equipment	CHL18	0.94	1.63	0.28	0.46	2.790
		CHL19	7.83	2.38	8.06	2.04	0.830
Taking Direction	CHL20	1.06	1.43	0.33	0.59	3.90	
	CHL21	7.50	2.12	7.89	1.18	0.485	
Work Skills	Speed	CHL22	1.56	2.57	0.22	0.58	4.630*
		CHL23	6.78	2.02	7.33	1.45	0.896
	Following Instructions	CHL24	1.17	2.12	0.06	0.24	4.875*
		CHL25	8.78	1.63	9.78	0.65	5.859*
Task Analysis	Competence	CHL26	3.28	0.96	3.61	0.50	1.692
	Skill Level	CHL27	2.11	1.08	2.89	0.76	6.265*
	Total	CHL28	7.22	4.85	10.39	3.09	5.466*
Acceptance Skills	Appearance	CHL29	0.89	1.71	0.28	0.57	2.060
		CHL30	8.94	1.51	9.00	0.97	0.016
	Punctuality	CHL31	1.11	2.06	0.11	0.32	4.159
		CHL32	9.67	0.59	9.06	1.26	3.455
	Self-Expression	CHL33	1.17	1.76	0.44	0.70	2.620
		CHL34	8.28	1.74	8.94	1.98	1.143
Relationship with Co-workers	CHL35	0.83	1.65	0.44	0.62	0.872	
CHL36	8.33	1.49	8.94	1.26	1.757		
Overall Scores for Checklist	Difficulty	CHL37	10.78	13.34	2.78	2.02	6.325*
	Total	CHL38	88.28	16.83	95.56	8.74	2.650

CHL = checklist

\*p < 0.05 df = 1, 34

\*\*p < 0.01 df = 1, 34

the first three identified variables, an ANOVA-approach was selected as the best method to do this (see Appendix G - a methodological note), and each of the possible confounding variables were used as dichotomized independent variables. To check on the effects of the anomalous successful subjects a set of parallel analyses were conducted, one with all subjects and one with the four deleted (the revised' success group).

### Results for the Checklists

#### Social Maturity

##### A. Communication (CHL7)

Contrary to the earlier findings (Table 5), with sex as an independent variable (I.V.) there was a significant main effect for Group ( $F(1,35) = 4.06, p < 0.05$ ) which remained significant when the revised success group was used ( $F(1,31) = 4.73, p < 0.05$ ). Thus removing variance due to sex from the error variance produced a significant group difference. There were no significant results when secondary handicap was controlled for.

##### B. Consideration (CHL2)

In accordance with the earlier finding (Table 5), no significant results were obtained when sex, or secondary handicap were used as independent variables. The revised success group ( $N = 32$ ) also failed to show any significant differences between the groups.

##### C. Getting Friends (CHL3)

In accordance with the earlier analysis, (Table 5) no significant group difference was found. However, a significant main effect for sex, (regardless of group), was found  $F(1,35) = 4.839, p < 0.05$ . This was maintained on using the revised success group. Generally, females (successful or not) scored higher than males so it seems that this checklist is open to bias from the sex of the person being assessed. No significant results from secondary handicap as an I.V. were found.

C. Leisure (CHL8)

For both of these scales, as found before (Table 6) there were no significant results when the effects of sex and secondary handicap were controlled for. This occurred for both success groupings.

D. Budgeting (CHL9)

In accordance with the earlier analysis (Table 6) no significant Group difference was found. However, a significant main effect for sex (regardless of Group) was found ( $F(1,35) = 4.561, p < 0.05$ ), but this sex effect was not significant when the revised success group was used. The variance due to secondary handicap, when removed, did not lead to any significant differences. Thus, when the effect of the four anomalous cases in the success group was removed, the difference in budgeting between the sexes disappeared; indicating that the sex effect could be attributed to the presence of the four (male) anomalous cases in the success group.

E. Cooking (CHL10)

Contrary to the earlier finding (Table 6), there were no Group effects when the variance due to sex was controlled for. However, there was a significant main effect for sex (regardless of Group); ( $F(1,35) = 15.409, p < 0.0001$ ) which was also present in the revised success group data, females scoring higher than males.

When secondary handicap was included as an independent variable, the Group effect remained ( $F(1,35) = 6.179, p < 0.05$ ), no doubt because of the confounding influence of the sex of subjects. This Group effect became non-significant using the revised success group. It is possible to conclude then, that the produced Group differences found for this variable are due to the confounding influence on the subject's sex, specifically females scoring higher than males.

Community Awareness Score (Total of CHL6 to CHL10)

There were no Group effects, however, there was a significant main effect for sex ( $F(1,35) = 4.672, p < 0.05$ ) which was not significant

D. Keeping Friends (CHL4)

In agreement with finding reported in Table 5, no significant differences were found for Group when sex or secondary handicap was included as an I.V. No significant results when the revised success group was used. Thus, it appears that the groups are equally likely to retain their friends.

E. Handling Problems (CHL5)

As before (Table 5) the significant main effect for Group was present when sex was used as an independent variable  $F(1,35) = 6.701$ ,  $p < 0.05$ ) which remained when using the revised success group. Using secondary handicap as an independent variable, a Group main effect was also present ( $F(1,35) = 6.003$ ,  $p < 0.05$ ) which also occurred for the revised success group. Thus it appears that the group differences are not due to confounding by either of these, and, that the result of successful people scoring at a higher level than non-successful is an adequate estimation of their respective functioning.

Social Maturity Score (CHL1 to CHL5)

No significant Group differences were found for sex or secondary handicap as associated independent variables for either success grouping.

Community Awareness

A. Transportation (CHL6)

As before (Table 6), a significant main effect for Group was found, on removing the variance associated with sex  $F(1,35) = 7.44$ ,  $p < 0.05$  (successful than non-successful), and on removing that associated with secondary handicap,  $F(1,35) = 7.154$ ,  $p < 0.05$ . Both of these significant results were obtained using the revised success groups ( $F(1,35) = 6.733$ ,  $p < 0.05$ , and  $F(1,35) = 5.565$ ,  $p < 0.05$  respectively). Non-successful people are better at using transport than successful. This result appears not to be influenced by sex or secondary handicap.

B. Shopping (CHL7)

for the revised success group. No significant result was produced for secondary handicap as an I.V. Once again, females scored higher on average than males on this composite score, and probably reflects the significant results for sex on checklists 9 and 10. Given this result, and the significant Group effect on CHL6 this composite scale was included in the multivariate analysis presented below.

#### Self-Directed Behaviour Questionnaire

- A. Appropriate Dependence (CHL11)
- B. Inappropriate Dependence (CHL12)
- C. Autonomous Achievement (CHL13)

For each of the three above, there were no significant Group effects for either success grouping. This agreed with previous analysis using F-tests. There were no significant main effects or interactions due to sex or secondary handicap.

#### Vocational Checklist

##### Basic Work Habits

- A. Independence - Difficulty Score (CHL14)

As before, (Table 7) there was no significant main effect for Group on CHL14, when CHL15 is included as an I.V. There was no significant interaction. This result was maintained when sex was used as an I.V. Similarly the parallel analysis on the revised success group yielded no significant effects. Analysis with secondary handicap as the I.V. did not change the above outcome and therefore was not confounding the result of no group differences on this variable.

- Independence - Total (CHL15)

As before (Table 7) no significant effects for Group occurred when taking into account the variance due to CHL14, sex and secondary handicap. The results remained non-significant for the parallel

analysis using the revised success group. Thus there is confounding due to these and hence it is concluded that there is no difference between the groups on this variable.

B. Decision - Difficulty Score (CHL16)

In line with the earlier result (Table 7), a significant main effect for Group was obtained when the variance due to CHL17 was controlled for ( $F(1,35) = 15.868, p < 0.0001$ ). The interaction between Group and CHL17 also reached significance ( $F(1,35) = 5.319, p < 0.05$ ). Table 8 presents that data for the interaction between Group and CHL17 and shows that successful subjects scoring relatively highly on CHL17, so presumably demonstrating good ability to make decisions, are also seen by their supervisors as having relatively more trouble actually performing decision-making. The overall direction of the data is contrary to that expected, that is, successful subjects have been rated as experiencing more difficulty than non-successful subjects. There were no effects for sex or secondary handicap as independent variables.

**TABLE 8** Interaction between Group and CHL17 with CHL17 split into high and low subsets. Number of subjects in [N] contributing to the cell result.

Group	CHL17	
	High	Low
Non-success	0.44 [9]	0.11 [9]
Success	2.11 [9]	0.56 [9]

Decision - Total Score (CHL17)

C. Use of Equipment - Difficulty Score (CHL18)

Use of Equipment - Total Score (CHL19)

For the above three variables, the removal of the variance due to the confounding independent variables did not produce any significant results and hence the conclusion drawn is in agreement with the earlier result (Table 7), that no group differences exist for each of these variables.

D. Taking Direction - Difficulty Score (CHL20)

Contrary to previous findings (Table 7) there was a significant effect for Group ( $F(1,35) = 6.907, p < 0.05$ ) when CHL21 was controlled for. This was associated with a significant interaction between CHL21 and Group ( $F(1,35) = 6.907, p < 0.05$ ) the data for which is shown in Table 9. This shows that the significant difference was due to the 'high' rating obtained in the low subset of the success group. When the revised success group was used the results became non-significant, indicating that the high score in the 'low' - success cell (Table 9) was due to the presence of the four anomalous cases in that data.

On controlling for the effects of sex and secondary handicap there was no significant results. The conclusion drawn then, is that the Group differences obtained on this subscale depends upon ratings on CHL22. But even this difference is attributable to possible inaccurate subject group (i.e. the 'anomalous four' in the success group).

**TABLE 9** Interaction between Group and CHL21 with CHL21 split into 'high' and 'low' subsets, using all subjects. Number of cases contributing to cell mean in[ ].

Group	CHL21	
	High	Low
Non-success	0.18 [11]	0.57 [7]
Success	0.42 [12]	2.33 [6]

Taking Direction - Total Score (CHL21)

Consistant with previous results (Table 7), there were no effects for Group on controlling for confounding effects of CHL20, sex, and secondary handicap. Results were also non-significant on using the revised success group. Therefore, there are no significant Group differences for this variable.

Work Skills

A. Speed - Difficulty Score (CHL22)

Contrary to the results presented in Table 7, there were no Group main effects produced when CHL23 was controlled for as an independent variable. However, secondary handicap regardless of group, had a main effect ( $F(1,35) = 5.706, p < 0.05$ ) with those with a secondary handicap being rated as having greater difficulty. Using the revised success group the effect for secondary handicap remained, but also, a main effect for sex became significant regardless of Group ( $F(1,35) = 4.33, p < 0.05$ ) males scoring higher than females. This shows that this variable regardless of subject groupings, is susceptible to the effects of variance due to secondary handicap and sex.

Speed - Total (CHL23)

In line with previous findings (Table 7) there were no significant results for Group on controlling for CHL22, sex and secondary handicap. no change occurred on using the revised success group. There does not, then appear to be any significant differences between groups on this variable.

B. Following Instruction Difficulty Score (CHL24)

Contrary to previous results (Table 7) there were no significant result for Group when CHL25 was controlled for . Neither was controlling for secondary handicap or sex significant. On using the revised success group, a main effect for sex regardless of Group was obtained with females scoring higher than males ( $F(1,35) = 22.534, p < 0.0001$ ). It seems that this checklist subscale is influenced by the variance due to sex, if the confounding influence of the 4 male anomalous cases is removed. However, no group differences are apparent.

Following Instructions - Total Score (CHL25)Task AnalysisC. Competance Rating (CHL26)

For the above two variables, there were no significant results for Group when the confounding variables were controlled for. Use of the revised success group data yielded no significant effect.

This result is contrary to that found previously for CHL25 (Table 7) and suggests that the earlier significant result be interpreted with some caution. For CHL26 the non-significant result is consistent with the earlier finding (Table 7) so that the conclusion for this variable is that of there being no significant Group differences.

D. Skill Level Rating (CHL27)

Consistent with results in Table 7 a significant Group main effect was found ( $F(1,35) = 6.341, p < 0.05$ ) with CHL26 taken as an independent

variable. This became non-significant using the revised success group. This was not surprising, as one of the characteristics of the anomalous cases in the success group was a low score on this subscale. There was no Group effect when controlling for sex. However, on controlling for the variance due to secondary handicap a main effect for Group was found ( $F(1,35) = 9.694, p < 0.01$ ). This was not significant when using the revised success group.

These results suggest that this variable was influenced by the presence of the four people in the success group, whose data, when included, was producing the significant group effects, that is making the success group mean, (Table 7) spuriously lower than the non-success group.

#### Acceptance Skills

##### A. Appearance Difficulty Score (CHL29)

##### Appearance - Total Score (CHL30)

##### B. Punctuality - Difficulty Score (CHL31)

For the above three variables, no significant Group effects were produced on controlling for variance due to the possible confounding variables. This was not influenced by the revised success group. All of these variables then have produced non-significant results in accordance with Table 7.

##### Punctuality - Total Score (CHL32)

Contrary to findings in Table 7, there was a significant Group effect on controlling CHL31 ( $F(1,35) = 6.752, p < 0.05$ ). A significant two-way interaction was also present between Group and CHL31 ( $F(1,35) = 8.936, p < 0.01$ ). Table 10 shows this result, and it can be seen that the significance comes from within the non-successful group, with the 'low' subjects scoring below that of the others. Both effects were significant using the revised success group.

TABLE 10    Interaction between Group and CHL32 with CHL31  
split into high and low substs    Number of  
cases contributing to cell mean in [ ].

Group	CHL31	
	Low	High
Non-success	9.31 [16]	7.00 [2]
Success	9.67 [12]	9.67 [6]

Using all subjects, and controlling for secondary handicap, produced a Group main effect ( $F(1,35) = 5.963$ ,  $p < 0.05$ ) which became non-significant using the revised success group. It appears that the group difference on CHL32 is due to the lower overall scores by the non-success group, and particularly lower scores for these non-success cases having a high difficulty score on CHL32. No significant results for sex were found.

C.    Self Expression - Difficulty Score (CHL33)

In accordance with previous findings there were no significant results for Group when sex, secondary handicap or CHL34 were controlled for, which were not changed by using the revised success group. This variable appears not to be susceptible to group differences.

Self - Expression - Total Score (CHL34)

In accordance with previous results (Table 7) there were no significant Group effects for secondary handicap or CHL33. However, when the variance due to sex was controlled for, it produced a main effect, regardless of Group ( $F(1,35) = 17.152$ ,  $p < 0.0001$ ), females scoring at a higher level than males, which was also obtained for the revised success group ( $F(1,31) = 18.495$ ,  $p < 0.0001$ ). It appears then that sex influences score on this variable rather than group membership.

D. Relationship with Co-Workers - Difficulty Score (CHL35)Relationship with Co-worker - Total Score (CHL36)

For both of the above variables, there were no significant results for Group after controlling for the possible confounding variables. This was unaffected by using the revised success group and is in agreement with previous results (Table 7). No group differences are present for this variable.

Difficulty Total for Checklist (CHL37)

In line with previous results (Table 7) there was a significant Group main effect ( $F(1,35) = 5.896, p < 0.05$ ). There was also a main effect for CHL38 ( $F(1,35) = 7.471, p < 0.01$ ) and a two-way interaction between Group and CHL38 ( $F(1,35) = 6.337, p < 0.05$ ) see Table 11.

**TABLE 11** Interaction of Group with CHL38 split into two subsets. Number of cases contributing to the cell mean [ ]

Group	CHL38	
	High	Low
Non-success	2.50 [10]	3.13 [8]
Success	1.71 [7]	16.55 [11]

It is clear from Table 11, that the significance results from the very high difficulty score of those successful people scoring 'low' on CHL38.

All of these effects were also obtained on using the revised success group (Group  $F(1,31) = 5.531, p < 0.05$ ; CHL38  $F(1,31) = 13.406, p < 0.001$ ; Interaction  $F(1,31) = 11.295, p < 0.05$ ). Table 12 illustrates the influence of the 4 'anomalous' subjects in that the mean of the

TABLE 12 Interaction between Group and CHL38 with CHL38  
divided into low and high subsets using revised  
group. Number of cases contributing to cell  
means in[ ]

Group	CHL38	
	High	Low
Non-success	2.50 [10]	3.13 [8]
Success	1.71 [7]	8.57 [7]

low-success group dropped considerably when compared to Table 11. On controlling for variance due to sex there was also a Group main effect ( $F(1,31) = 8.098, p < 0.01$ ). On controlling for the variance due to secondary handicap the Group main effect continued ( $F(1,35) = 4.354, p < 0.05$ ) and using the revised success group, the Group main effect was also significant ( $F(1,31) = 4.514, p < 0.05$ )

Overall Total Score for Checklist(CHL38)

With CHL37 controlled for, a significant effect, regardless of Group was produced ( $F(1,35) = 14.364, p < 0.001$ ), together with a two-way interaction between Group and CHL37 ( $F(1,35) = 8.032, p < 0.01$ ), see Table 13. Controlling for sex, there was no significant Group effect. Using secondary handicap as an independent variable, there was again no significant Group effect

TABLE 13      Interaction between Group and CHL37 with CHL37  
divided into high and low subsets. Number of  
cases contributing to each cell mean in [ ].

Group	CHL37	
	High	Low
Non-succes	93.17 [6]	96.75 [12]
Success	80.00 [12]	104.83 [6]

On examination of Table 13, it can be seen that group differences are confounded by people with a high overall difficulty score (CHL37) scoring low on CHL38 with the reverse occuring for those who scored low on CHL37, scoring high on CHL38.

Use of the revised success group did not change these results. For this variable, the overall hypothesis (that success were higher than non-success) was supported by those subjects that scored 'low' on CHL37, but not by those that scored 'high' on CHL37.

#### Multivariate Analysis

An initial pool of variables were compiled for use in this discriminant function analysis (Table 14). Theoretical reasons, outlined in the second chapter, led to the priority as shown, but also the results of the primary analysis were taken into account, particularly for giving priority to the first three variables. (see Appendix G for a brief comment on the use of Discriminant Analysis for the present data). Otherwise, the procedure as specified by the S.P.S.S. manual (Nie, Hull, Jenkins, Steinbrenner, and Brent, 1975) for selecting variables was adhered to. A stepwise discriminant analysis was performed and the results are shown in Table 15. Six variables were retained, and the analysis yielded a significant group difference ( $F(6,26) = 4.70$ ,  $P < 0.01$ ), accounting for 49% of the variance and the group centroids indicate that the predicted groups were 1.92 z-scores apart (Table 15).

When used to predict group membership, six misclassifications occurred (16.7%), three cases in each group. This occurred for both the standard set (N = 36) and the revised group (N = 32). On examining the coefficients and the F value on entry from Table 18, it appears that CHL16, CHL31 and I.T.P.A. 2 (Auditory Association) contribute most to the discrimination of the two groups.

**TABLE 14** Variables considered for inclusion in the Discriminant Analysis and their priority (route)

VARIABLE	PRIORITY
Vocational Checklist CHL32	1
Vocational Checklist CHL16	2
Vocational Checklist CHL31	3
Residential Checklist Social Maturity Total	4
Residential Checklist Community Awareness Total	5
Social Education Community Awareness Test	6
Social Education Communication Checklist	
I.T.P.A. Auditory Association	7
I.T.P.A. Verbal Expression	
I.T.P.A. Grammatic Closure	
I.T.P.A. Auditory Reception	
Purdue Pegboard Right Hand Score	8
Purdue Pegboard Left Hand Score	
Purdue Pegboard Both Hands Score	
Purdue Pegboard Assembly Score	

**TABLE 15**    Summary of Discriminant Function Results

Variable	Dis. Function Coefficient	Mean	S.D.	Order Step in	F. on Entry	P
CHL32	0.46326	9.361	1.01	1	3.468	0.0712
CHL16	0.80299	0.806	1.09	2	6.463	0.0043
CHL31	0.28076	0.611	1.53	3	5.282	0.0045
I.T.P.A. 2	-0.66133	23.944	7.63	4	4.374	0.0064
Purdue Pegboard Left	1.36905	10.583	3.245	5	5.107	0.0017
Purdue Pegboard Both	-0.72272	7.833	3.000	6	4.703	0.0019

Overall:  $R^2 = .49$ ,  $F(6,29) = 4.7$ ,  $p < 0.002$  Group Centroid  $\pm 0.9587$

## CHAPTER 5

### Discussion

Before discussing the results in detail, a brief summary is presented.

#### Group Differences

After controlling for extraneous sources of variance, Group differences were found on CHL1 (Communication); CHL5 (Handling Problems); CHL6 (Transportation); CHL16 (Punctuality - Total score); CHL20 (Taking Direction - Difficulty score); CHL 32 (Punctuality - Total score); and CHL37 (Difficulty Total for Checklist). For CHL 38 (Overall Total score) a group difference occurred for those scoring 'low' on CHI 32.

A Discriminant Function Analysis with selected variables found the CHL16 (Decisions - Difficulty score) and CHL31 (Punctuality - Difficulty score), and the I.T.P.A. 'Auditory Association' subtest contributed most to the discrimination of the two groups, and, when combined with CHL32 (Punctuality- Total score) the Purdue Pegboard 'Left hand' and 'Both hands' scores, significantly discriminated between the two Groups.

#### Sex

The analysis also produced a number of significant effects, irrespective of group, when sex was used as an independent variable. These were CHL3 (Getting Friends); CHL9 (Budgeting); CHL10 (Cooking); the Community Awareness score; CHL22 (Speed - Difficulty score); CHL24 (Following Instructions - Difficulty score); and CHL34 (Self Expression - Total). Controlling for sex also had the effect of causing the Group effects identified in the preliminary analysis for CHL10, CHL27 and CHL28, to become non-significant, suggesting that these three scales are susceptible to the influence of sex biases.

#### Secondary Handicap

A significant effect for secondary handicap, regardless of group,

was identified for CHL22 (Speed - Difficulty score) but additionally, when controlled for, produced a significant Group effect for CHL27 (Skill Level rating).

#### Vocational Checklist: Independence of Total and Difficulty scales

The effect for controlling for the independencies within the Vocational Checklist scales, was inclined towards eliminating previously significant Group results. This effect was produced for CHL22 (Speed - Difficulty score; CHL24 (Following Instruction - Difficulty score) and CHL25 (Following Instructions - Total score).

Concurrently, some significant Group results emerged where previously they had been non-significant. This occurred for CHL20 (Taking Direction - Difficulty score) and CHL32 (Punctuality - Total score). The overall Difficulty rating (CHL37, also produced a main effect when included in the analysis for CHL38 (Totals score for complete checklist).

#### Revised Success Group

The results for this 'parallel analysis' were of primary interest when it changed previously significant results because of the possibility that spurious significant effects found earlier may be due to unusual scores for clearly anomalous subjects. Significant Group results for CHL20 and CHL27: Secondary Handicap effects for CHL30; and Sex effects for CHL9 and 'Community Awareness' scales, became non-significant using the success group without the 'anomalous four'. All these initial results were cases where the mean differences were in favour of the non-successful group. Thus some of the originally perceived inconsistency in the data, is due to these subjects.

Additionally, sex effects were produced for CHL22 and CHL24 on using this new grouping. The sex effects, whether produced or eliminated can probably be attributed to the fact that all of the four anomalous subjects were males. The results suggest anomalous subjects occur in the 'successful' group probably because either 1) low skilled jobs, where poor work performance will not readily lead to dismissal are easier to obtain for males or 2) that there is a greater tolerance of

male incompetence than female incompetence, or some combination of 1) and 2).

### Hypotheses

From the preceding analysis, some comment can now be made on the implications for the hypotheses.

Hypothesis 1:1 was not supported. It was found that the two groups had similar measured levels of intellectual functioning. The results from the W.A.I.S. assessments reveal that subjects were drawn from the Moderate, Mild retardation and low normal ranges of intelligence (W.H.O. classifications), although the average score was in the Mildly retarded range for both groups. This result concurs with the assertion by Kolstoe (1961), who maintained that an IQ over approximately 40, no longer interferes with the employability of mentally retarded people. Although it should be noted that in the absence of severely and profoundly handicapped subjects in this study Kolstoe's (1961) assertion is in effect supported by default, and it seems that the employability of people with IQ's below 35 has yet to be conclusively examined in New Zealand.

Subjects with a measured IQ appreciably higher than 40 who are experiencing difficulty maintaining themselves in a job were identified, and this suggests that other influences are more prominent in determining vocational adequacy. Examining the IQ's obtained from those people deemed 'anomalous' in the success group implies that an IQ over 40 does not necessarily aid the individual in the vocational placement. These findings partially support the results of McKerracher and Orritt (1972) who found that IQ was not related to vocational performance.

The Group differences on the W.A.I.S. Picture Completion subtest with non-successful subjects scoring higher than successful, has not been found previously (cf. Ohwaki, 1974). Possibly, the Workshop environment encourages a higher level of observer discrimination competence, because of the type of work provided and/or the wider variety of tasks.

Hypothesis 2:1 was not supported, successful and non-successful

subjects were similar in receptive lingual ability when measured by the I.T.P.A. subtests selected. Hypothesis 2:2 was also not supported, with both successful and non-successful subjects scoring at the same general level of expressive lingual ability when measured with selected I.T.P.A. scales.

One reason for a lack of significant group effects for both receptive and expressive assessments though, could be because of the relationship of the variables to IQ. Gunzburg's (1964) study, cast doubt on the discriminatory power of the I.T.P.A. with people having IQ levels over 70. Certainly for people with an IQ in the normal range, the I.T.P.A., which was designed for use with children, would become far too easy to allow discrimination of individuals to occur and this is the most likely explanation for the present results.

The results for the I.T.P.A. have generally failed to show differences similar to that in Feister and Giambra's (1972) study. However a major finding of their research was superior lingual skills were associated with superior vocational skills, as will be discussed later the present study also failed to demonstrate an overall superior vocational skill level.

The results to test Hypothesis 2:3 were inconsistent. Using the checklist completed by the experimenter at the end of psychometric assessment (the Communication subtest from the A.F.I. Social Education Test), 2:3 was not supported. However, a checklist completed by the subject supervisors (CHL1 - Communication) produced group differences, but with non-successful people scoring higher than successful subjects, even when all sources of confounding were statistically removed. Hence it appears that this hypothesis is not supported in the direction stated.

The findings for the language component of this study, are generally at odds with Feister and Giambra's (1972) results. The present result for the Communications checklist suggest the distinct possibility that the effects of sex were influencing the result. Particularly, for example, in the case of CHL34 (Self Expression - Total score) which had a significant result for sex (females scoring higher), and was highly correlated with CHL1 (Communication). This result is easier

accounted for when it is realised that the unsuccessful group (also higher scoring) had a significantly higher number of females in it. Another possibility though, is that the type of jobs the successful subjects were performing did not have a large verbal component so that an individual with poor lingual ability can still perform adequately.

While there is no clear distinction at present, early indications from this research imply that basic communication skills should be included in the preparation for unsheltered jobs but the appropriate criterion skill level awaits further research in this area. An increase in communication skill ability may well produce, in turn, a widening of the range of jobs available to the handicapped worker to include those that require a higher lingual ability, for example food services. Thus facilitating a greater number of 'graduations' from the facilities of the IHC.

Hypothesis 3:1, concerning performance on the Purdue Pegboard was not supported. Subjects in both groups performed in a similar range. However, multivariate analysis suggests that scores in this area, when considered in association with other abilities have a proportion of unique variance, which can contribute to the differentiation of the two groups. This evidence contradicts the statements of those researchers who would reject tests like the Purdue out of hand, such as Kulman et al. (1975). Certainly the proportion of unique variance may be small, but even this may assist in screening batteries. This finding reinforces the arguments of those advocates of non-job sample assessments (Timmerman and Doctor, 1974; Halpern, 1978). The effect seen here may well be similar to that proposed for the IQ of the subject. Specifically, that once a certain criterion level of manipulative dexterity has been exceeded, competence in this area will no longer hinder the individuals vocational adequacy. Certainly, it appears that the Purdue assesses some component of skill that is not being assessed by other tests and yet is appropriate to the jobs being performed by the subjects in this study.

Social Maturity, as a composite score, did not support hypothesis 4:1, although it could be stated that there was partial support as successful subjects were rated as being more competent in handling interpersonal problems (CHL5). This adds support to McKerracher,

Brown and Ryba's (1980) results, who found that individuals with more independence and higher vocational competence are apparently more likely to fail due to major deficits in 'personality' areas. Their subjects with apparently rebellious and irresponsible attitudes, that were possibly allied to aggressive outbursts and rejection of conforming roles, were more likely to fail and be returned to the workshop. This result may partially account for the effects of secondary handicap (mentioned later) and the higher incidence of schizophrenic illness diagnosed in unsuccessful subjects (four people against none in the successful group).

Schizophrenia has, as some of its distinguishing characteristics for a chronic disorder; social isolation or withdrawal, and blunted, flat, or inappropriate affect (Goodwin and Guze, 1979). Such behaviour implies interpersonal problems, and as such would be expected to emerge in the results for 'difficulties in handling problems, for those people. The tendencies mentioned by McKerracher et al. (1980) appear in the CHL5 data for the present study.

The data of the Self Directed Behaviour Questionnaire did not produced results to support Hypothesis 4:2. Further refining of the items appears indicated concentrating on the definitions provided, making them more precise, and hence increasing the reliability of the scales.

Hypothesis 5:1 was also not supported. Successful people did not have a greater understanding of the surrounding community, whether this knowledge was sampled by direct questioning, or by reports of others. What was more apparent was that the scales used to measure community awareness, were influenced to a greater degree by sex rather than vocational placement. Also, even though this scale purports to measure 'Community Awareness', it is difficult to justify the inclusion of the 'Budgeting' (CHL9) or 'Cooking' scales (CHL10) as these skills do not directly reflect subjects necessary knowledge of the community, they rather reflect competencies necessary for self-care within the community. This reservation is supported by the finding of sex differences for both of these scales. Allied to this problem is the possibility that these scales did not sample a large enough number of facets of community life and/or in sufficient detail to

reflect any difference that may be present. The Social Education subtests can be used in a screening manner, as each subtest is provided with a more exhaustive (and somewhat lengthy) training and assessment booklet (Marlett, 1971). Perhaps the more detailed approach to assessment of Community Awareness offered by these booklets would provide a better discrimination in future studies because of the wider, and more detailed sampling of Community Awareness knowledge, although it would sacrifice somewhat the brevity and ease of use that the Social Education Test has at present.

On examining the data used to test Hypotheses 6:1 and 6:2 both were not supported for group differences. When the effect of the 'Difficulty' and 'Total' score independence for the Vocational checklist were controlled, on some subscales, certain members of each group were performing in the hypothesised directions, but the number and individuals doing so varied. The 'supporting' subjects were characterised by scoring either 'high' or 'low' on the corresponding 'Difficulty' or 'Total' scale. This intra-group division was previously used by Schulman, (1967) who additionally found that there were differentiating variables within the high and low groups. A relatively small number of subjects in each cell after performing this split prevented a similar exercise in this study.

For this study then, the non-successful group has demonstrated a superior performance in a number of areas. Successful subjects were characterised by relatively low communication ability, lower ability to use transportation services, more difficulty making decisions and taking directions and experiencing greater general difficulty in vocational areas. However, they were also rated as better at handling personal problems, and being punctual. There are a number of possible explanations for these results. Firstly, they could be reflecting similar findings to those of McKerracher et al. (1980) as mentioned previously, where successful subjects' superior ability in some areas produces a 'halo effect' that extends to mask, to some degree, an inferior vocational ability. Another possibility is that the result reflects the effects of training completed in the Workshop by non-successful subjects. That is that the non-successful subjects have genuinely improved their performance since they had returned from their unsheltered placement and as such is an artifact of a lack

of control for this. The period since the non-successful subjects had returned to the Workshop did vary quite widely, however the nature of the training within the IHC facilities make it very difficult to quantify such experiences. Also, although the general skill competence for the jobs done by groups of subjects was compared, there was no attempt to compare the types of jobs done by the subjects so that for some successful subjects, the reported difficulties or inferior performance was not actually inhibiting work production. One example would be the results for 'Communication' (CHL1). Although an inferior communication ability was reported for successful subjects, it could be that with a restricted repertoire of jobs (Brolin and Kokaski, 1974), mainly in the labouring areas (Mahoney, 1976b), verbal ability is not as important as the ability to perform somewhat repetitive sequences accurately (perhaps measured by the Purdue Pegboard).

Another, in some ways contrasting possibility is that the successful worker has a greater opportunity to make 'mistakes' and hence be seen to be having difficulty because of the greater freedom to show initiative at work. All of this leads to a questioning of the validity of this instrument for making inter-group comparisons. As it is designed as a training aid the A.F.I. scales should be maximally sensitive to within subject changes (reflecting changes in skill levels) but may not be so sensitive to inter-subject differences, given that each subject will be starting training at different competence levels. McKerracher et al. (1980) found this to be so, where the A.F.I. Vocational Checklist more accurately predicted vocational credits on the next training step for subjects, than it did ultimate vocational placement.

The sensitivity for the A.F.I. checklists may also be greater for intra-group differences (rather than inter-group). This would mean that the difficulties 'successful' people have are a lot more obvious in unsheltered jobs because of a 'contrast' effect with their non-handicapped co-workers. The implication of the presence of this bias is, of course, that rather than being the objective criterion-referenced samples they were intended to be, that the scales took on more of the characteristics of norm-referenced instruments. The second alternative was explored in the data analysis, and was that the inexperienced raters used for the success group, were more likely

to use the difficulty scale because it was available (that is, it acted as a prompt to check difficulties). The results did not support this possibility and no gross systematic biases were detected.

Two other contributing factors exist. If the standards of work are higher in unsheltered jobs, then an equal or superior job performance by the successful subjects may well be under-rated, relative to the non-successful group, certainly the scope exists for this to happen in the A.F.I. checklists (Walls and Werner, 1977). If this effect is present it may well contribute to the failure of trainees placed in unsheltered positions by allowing the over estimation of the skills a specific trainee has, thus resulting in precipitant placement.

On the other hand, the environment within the Workshops may be somewhat indulgent, so that actual difficulties are seen as not so intrusive (a type of norm-referencing in itself). Once again precipitate placement may be facilitated but this time by an under-estimation of the difficulties being experienced by a trainee. Both of the above possibilities accentuate the need for accurate behavioural specification of checklist items, and staff training to ensure adherence to correct assessment procedure.

For the specific checklists the results for difficulty with decisions, may reflect the lack of opportunity to make routine choices in unsheltered jobs, and the same possibility exists for the difficulty in following instructions, both cases where the successful people were rated as having greater difficulty. Each of these mentioned results may stem from the practice of employing a mentally handicapped person to do a specific job, rather than hiring them as just another worker, to perform a range of work. Thus the handicapped workers become habituated to one sort of skill repertoire, and, when this is combined with the poor generalisation ability of developmentally disabled people, (Estes, 1970; Hagan and Huntsman, 1971) may actually interfere with the learning of new skills.

The suggestion by Brolin (1972), of analysing the results for each sex separately was taken, and indeed support was found for the possibility that the sex of the subject was influencing checklist scores (see Chapter 4). Regardless of group, females were better at making friends, at budgeting, cooking and generally were more

aware of the surrounding community than males. Also, they were better at self-expression and were superior in maintaining an adequate rate of work. However, females were rated as having more troubles following instructions. The significantly smaller number of females in the successful group seems to imply that although females can demonstrate a superior performance in some social and community awareness areas, these skills do not necessarily (because of a lack of group differences) aid people in maintaining themselves in the community. Possibly, once again, due to the type of jobs that people are placed in not requiring more than adequate social ability. In fact, it may be that individuals with a superior social competence would not be content with the jobs generally performed by the successful group because of the lack of social stimulation. In part, these additional results add weight to the ideas of Brolin (1972) whose own work in this area suggested that success for females is a function of more factors than males.

Secondary handicap, in this study, has been shown to adversely effect the ability to maintain speed of production. In the absence of specific physical handicaps (such as cerebral palsy) it seems that these handicaps influence the motivation of the individual, rather than actual physical ability to perform adequately. Given that there was a greater incidence of secondary handicap in the non-successful group (especially those possibly affecting mood, such as schizophrenia) it appears that secondary handicap adversely effects the ability to maintain an unsheltered job and as such agrees with findings by Collman and Newlyn (1967) who found that secondary handicaps adversely prejudiced the probability of maintaining employment for intellectually handicapped people. In preparing future expansion of services then, the provision of specific support services (such as vocational and personal counselling) for those people with secondary handicaps should be considered to minimise the chances of failure attributable to additional disabilities.

Revising the subjects placed in the successful group by screening individuals for clearly inferior performance on the selected variables of skill level (CHL26) job competence (CHL27) and overall difficulty rating (CHL37) changed some of the initial results which were based on the complete groups. Four (22 percent) of the 'successful' subjects

were eliminated in this way and their presence in the successful group probably reflects the confusion that was observed when IHC supervisors were selecting subjects for groups (see Chapter 3). If specific criteria for progression to unsheltered jobs were available for the IHC., then its supervisors would have nominated relatively few trainees during this exercise. Considering the reasonably small number of supervisors participating, a large number of trainees were nominated, and only four trainees achieved the 80 percent or better criterion for inclusion in the groups. This is evidence in itself to suggest that there is a lack of universally accepted standards in the training facilities of the IHC. for 'graduation' to an unsheltered job. Also, it seems that there is a certain reluctance to return someone to the Workshops once their performance is clearly unsatisfactory, (particularly in relation to those screening variables used). All of the subjects classified anomalous in the 'successful' group had been working in their respective jobs for at least a year, one or two for much longer (up to 5 years). Perhaps some of this reluctance comes from a fear of losing the unsheltered placement completely. If this is the case, then a policy of contracting for the position rather than finding a job for a specific person could be adopted. In practice, this would mean that if one trainee proves unsuitable for the job he or she can be replaced by another more competent person, with minimal disruption to the employer. Admittedly this process would require an even closer liaison with employers. Any reluctance on the part of the employer may well be diminished by stressing that ultimately they will be getting an improved employee, and consequently better value for money.

Precipitate placement is not however, the only one of Wolfenberger's (1967) "common errors of placement" (see Chapter 2) that has occurred with the 'anomalous' subjects. They can also be described as experiencing the second (insufficient briefing and training for a specific job) and third (inadequate communication with supervisor about the characteristics of the retarded individual) such that work performance that is not rated as adequate is being tolerated by the employer. Also, in some respects, these four people could be seen as experiencing error number five (premature withdrawal of support services for the trainee) because a return to the Workshop for more training to rectify deficits has not be instituted.

Generally, the results comparing the revised success group data to the original group show that the simple distinction between employed and not-employed is not necessarily sufficient to discriminate between those people who can be described as successful or non-successful. Additionally, there were inconsistencies detected in the data obtained from the checklists. In the absence of objective, behaviourally based criteria for recording difficulty scores then, these checklists should be considered as more characteristic of norm referenced tests. Both of these aspects must, in the context of this study, lead to a questioning of the reliability of these instruments. Although it is possible to discriminate between successful and non-successful groups as defined, using relatively easily administered tests, the discrimination was in a negative direction for some scales (e.g. difficulty scores) that would not be practically advisable, or theoretically feasible to build in to an instructional programme.

Expansion and behavioural specification of assessment items may well produce improved reliability for the checklists, and enable a more accurate service delivery system to be developed. This would be an important issue to take up in future research which could possibly have a wider scope than the present study.

### Theoretical Implications

Cobb (1972) has distinguished two basic types of approach to the placement of intellectually handicapped people in unsheltered jobs. The first, typically asks the question 'what is the probability of this trainee being successful on this task?', that is, it has a job-centered approach. Given a specific job, each eligible individual is considered and the most appropriate one selected. The second, approaches the problem by asking 'What is the task on which this trainee is most likely succeed?', and is more client-centered, that is, the decision on placement begins with the trainee who is prepared for a job, which in turn initiates the search for an appropriate placement. While both require knowledge about the performance of each trainee, the second one relies most heavily on specific criteria of employability (so that the search for a job can begin) and hence requires the data and evidence from the type of research conducted in the present study. Specifically, guidelines about what sort of skills and criterion levels

are most powerfully predictive of success in the unsheltered workplace (where 'success' is in turn based on behaviourally specified criteria). However, if the research is done on a population basically selected using the first placement procedure (job-centered), theoretically based on the assumption that trainees were placed using the second (client-centered) method, then the data gathered may well give partially misleading results due to the compromise occasionally made between the necessity of placing someone in a job, and the readiness of the individual trainee for an unsheltered position using the job-centered method. Such a compromise, if it occurred often enough would be evident through the specific deficits of the 'successful' people. It appears that in the present study, some deficits are apparent in the successful group, where subjects were not necessarily all that adept in some facets of the vocational placement.

Success, or the lack of it though, is always going to be quantified in terms of what has been used to measure it. Unfortunately, some data requires the use of restricted instruments (for example, IQ) and as such would not be readily accessible to the Workshop supervisor. It is in some ways propitious then, that the results of this current study contribute to the previous evidence that these specialised instruments do not achieve an accuracy of discrimination unavailable from those requiring less specialised training to use.

As well as identifying problems in the placement procedures in his 1967 article, (mentioned earlier), Wolfensberger criticised in general, studies of this type. He contended that they have suffered from a number of serious shortcomings. One of these (lack of cross-validation of findings) originates from the argument that independent variables (predictors) and dependent variables (criteria) are measured within the same time period on a given population sample, rather than over a time interval. "Prediction" in this case, can only refer to the probability that variance in one set of measures (predictors) contributes to variance in another set of measures (criteria) at a particular point time. It does not necessarily mean (without evidence) that scores obtained at one period in time will predict criterion outcomes at a later period in time (Cobb, 1972). Parnicky (1963), in line with psychometric evidence (Anastasi, 1976) has suggested that the reliability of predictors tends to decrease over time.

However, by abandoning for the present, the attempt at prediction and adopting a more descriptive approach, as this study has done, Wolfensberger's (1967) criticisms, are largely overcome.

Furthermore, by using the criteria of success for initial selection only (hence allowing the identification of four unusual 'successful' cases), and the use of checklists to sample behaviour in other areas, Wolfensberger's fourth (almost exclusive emphasis on variables inherent in the training and placement process or in work situations) and fifth criticisms (assumption of homogeneity in the criteria of success among a wide range of retarded persons and working situations) are also partially countered.

By using a majority of relatively easily administered assessment instruments, this study has established that those instruments available show some promise of being useful in this type of research. However, inconsistent results will probably continue to be found, until some form of general standardisation and validation emerges on assessment materials.

#### Conclusions and Indications for Future Research

By whatever criteria, there are variations in the degree of success or non-success of people placed in unsheltered jobs. The ability to predict the extent of this would allow the positive development of services for the developmentally disabled. While suffering from a lack of control in some areas (such as across time and training, also across some situational variables such as employer attitudes) the present study found that there are some differences between employed and once-employed intellectually handicapped workers. The prediction of success or non-success, when research expertise permits this to occur, will be the result of an interaction between three sets of variables. These are 1) properties of the person, 2) environmental interventions, and 3) societal accommodations. It is possible to classify the implications of the present research into these categories.

Properties of the individual that seem to require specific attention are the communicative , and social skill ability. In particular, the ability to resolve interpersonal problems successfully. Also in

this category is the awareness that each of the sexes may require different training for example, males may need supplementary training in budgeting their wages.

Environmental intervention implied in this study include the expansion of support services for those trainees with secondary handicaps. Also, adopting the procedure of contracting for jobs, coupled with a client-centered approach to placement procedures should be considered in recognition of the fact that occasionally, a trainee will have to return to the Workshop for extra instruction when he or she does not perform adequately in an unsheltered job.

In the third category has been placed the less specific implications, recognising that some of these are somewhat long-term in nature. The first of these concerns the A.F.I. scales. These are at present influenced by the sex of the subjects, the apparent poor reliability for 'difficulty scales, and the lack of behavioural definitions for some items which may produce the somewhat subtle independencies of the 'Difficulty' and 'Total' scores. Further refining of the A.F.I. checklists to remedy these deficits, including the extension of some scales could be undertaken. To aid in the type of research in this study, and any done to improve the A.F.I., the documentation of remedial programming needs to be undertaken. Associated with the previous point, regular monitoring of staff reliability when using the A.F.I. should be performed. Finally, attention to the task of developing performance criteria for the graduation of trainees from the Workshops, to unsheltered work must be increased. Such criteria, can be aided in their formulation by continued research similar to this study for although in this case it has produced mainly general recommendations it is a necessary prelude to scientific prediction and refinement of placement procedures.

Notes

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## Appendix A

Letter used to initiate contact with employers.

Dear Sir

In association with the Manawatu Branch of the N.Z. Society for the Intellectually Handicapped, I wish to conduct a study to examine vocational adjustment of handicapped workers. This research will partially fulfil the requirements for my M.A. degree programme in psychology.

In order to gather meaningful data, it will be necessary to visit those people working in an unsheltered vocational placement at work. As your company employs an intellectually handicapped person, your co-operation is sought in allowing this visit.

On arriving, information in a number of areas will be gathered, some of which will necessitate consulting the immediate superior of the individual involved. All visits will be made with Mrs H. Baxter, the outside supervisor for the S.I.H. and an effort will be made to time them at your convenience to minimise any intrusiveness.

If you would like more information on this study, or anticipate refusing the requested access, please contact me at the above address.

Yours sincerely

GORDON SINCLAIR

## Appendix B

Instructions to supervisors when selecting additional subjects for successful group.

On the list of trainees attending your workshop indicate the trainees that you would consider to be ready for placement in a suitable job outside the Society facilities. Please think about your decision carefully so that if a suitable job became available tomorrow you would not have any doubts about placing the trainee under consideration.

Review only those trainees for whom it is realistic to consider the possibility of unsheltered employment and who you know well. If there is any question of how well you know the trainee do not propose this person.

## Appendix C

Instructions to workshop supervisors when placing additional subjects for non-successful group.

On the list of trainees attending your workshop indicate the trainees that, in your opinion would be capable of working outside the facilities of the society in a suitable unsheltered job, but who at present are lacking sufficient skills in one or more areas. And that this skill deficit is sufficiently severe to rule out their placement if a suitable job became available tomorrow.

Review only those trainees for whom it is realistic to consider the possibility of unsheltered employment and who you know well. If there is any question of how well you know the trainee do not propose this person.

## Appendix D

Note sent home with subjects from IHC. facilities.

With the approval of the Branch Committee, Gordon Sinclair, a graduate student from Massey University will be doing research in the Manawatu facilities over the next 4 weeks. The research will entail individual assessment of selected trainees, the results of which will be kept confidential.

John F. Doolan  
ADMINISTRATOR

3 September 1982

## Appendix E

Group Means, Standard Deviations and F-statistics for W.A.I.S.:  
Purdue Pegboard and I.T.P.A. scales.

TABLE 1    Group Means, Standard Deviations and F-statistic  
for the W.A.I.S.

W.A.I.S. SUBSCORE	GROUP				F
	Success		Non-success		
	Mean	S.D.	Mean	S.D.	
Information	4.72	2.60	4.61	2.09	0.019
Comprehension	5.33	1.72	4.89	1.37	0.692
Arithmetic	2.84	2.12	3.11	2.06	0.158
Similarities	2.50	2.73	3.72	3.58	1.327
Digit Span	3.22	2.36	3.94	3.65	0.488
Vocabulary	4.889	2.22	5.00	2.00	0.024
Digit Symbol	3.00	2.45	4.11	2.52	1.633
Picture Completion	4.83	2.23	6.50	1.65	6.487*
Block Design	4.39	2.28	5.06	2.34	2.418
Picture Arrangement	4.78	3.44	5.28	2.69	0.235
Object Assembly	4.00	3.38	4.50	3.03	0.218
Verbal IQ	63.72	10.28	65.89	10.88	0.359
Performance IQ	65.11	14.36	69.22	11.48	0.899
Full Scale IQ	62.22	10.97	65.44	10.41	0.817

\*  $p < 0.05$  df 1,34

TABLE 2     Group Means, Standard Deviations, and F-statistic  
for each of the Purdue Pegboard scales

PURDUE PEGBOARD SUBTEST	GROUP				F
	Success		Non-success		
	Mean	S.D.	Mean	S.D.	
Right Hand	11.22	2.67	10.89	3.18	0.144
Left Hand	10.78	3.67	10.39	2.85	0.100
Both Hands	7.61	3.15	8.06	2.92	0.193
Assembly Task	28.22	13.53	26.39	11.50	0.191

TABLE 3     Group Means, Standard Deviations and F-statistic  
for each of the I.T.P.A.

I.T.P.A. SUBSCALES	GROUP				F
	Success		Non-success		
	Mean	S.D.	Mean	S.D.	
Auditory Reception	33.61	9.53	36.89	8.54	0.866
Auditory Association	22.28	8.55	25.61	6.40	1.753
Verbal Expression	18.78	5.15	18.11	4.25	0.179
Grammatic Closure	23.61	4.31	25.56	5.53	1.382

\*  $p < 0.05$       $df$  1,34

## Appendix F

TABLE 1     Correlation of Vocational Checklist Pairs  
and significance Levels over all subjects  
regardless of group

Checklist Pair		Correlation
Independence	Diff. Total	-0.0842
Decisions	Diff. Total	-0.5468**
Use of Equipment	Diff. Total	-0.3596*
Taking Decisions	Diff. Total	-0.4898*
Speed	Diff. Total	-0.3064
Following Instructions	Diff. Total	-0.0694
Appearance	Diff. Total	-0.3769*
Punctuality	Diff. Total	0.0923
Self Expression	Diff. Total	-0.4540**
Relationship with co-workers	Diff. Total	-0.1263

\*  $p < 0.05$

\*\*  $p < 0.01$

## Appendix G A Methodological Note.

Two issues concerning statistical procedures arose in considering the data analysis. The first concerns the choice of method to control for sources of extraneous variance; the second concerns the use of multivariate Discriminant Function Analysis (DFA) to assess group differences. A brief rationale of the procedure adopted in consideration of the above issues is presented here.

### 1 Controlling for extraneous variance

There are three main approaches to achieve this; covariance analysis (COVAR); Multiple Regression; and Analysis of Variance (ANOVA) using the confounding variable as a 'blocking' or 'levels' factor.

COVAR and Multiple Regression methods are essentially similar and particularly useful when the covariate is continuous (and not categorical as in the present data). Their main limitation, is that they have very restrictive assumptions (see Keppel, 1973, pp 479-484), which are not met in the present data. Specifically, 1) the Subject groupings are not randomly constituted (they are 'intact' groups), 2) the possibility exists that the experimental treatment (group membership) is not completely unaffected by the covariates, and 3) the assumption of 'homogeneity of regression coefficients' is not met in all cases (this is detected by the presence of 'interaction effects' in the ANOVA approach, see below).

The assumptions underlying the ANOVA approach are less restrictive than those required for COVAR and multiple regression procedures. In fact, the requirements detailed above are not necessary for using the ANOVA (treatment x levels) approach (Keppel, 1973, p 480). Further, there is now evidence to suggest that unless the correlation between the dependent variable and covariate is greater than .6, there is no unique advantage to using COVAR or multiple regression. Indeed, if this correlation is .4 or less (as generally occurred in the present data), the ANOVA method is likely to be more precise (Keppel, 1973, p 514).

In the ANOVA approach, the subjects are 'blocked' on the extraneous (confounding) variable(s) into, for example high and low categories (or males and females), and this factor is then crossed with the treatment factor (groups). An ANOVA is then performed on this data. Blocking has the effect of reducing the estimated error variance (if the blocking factor is truly confounding the data), and this gives an increased power to the F-test for the treatment effect (Keppel, 1973, p 509). The added (computational) advantage of the ANOVA approach is that not only does it directly test the group effect but also gives a more direct test of the significance of the 'block' main effects, and more importantly, of the 'group x block' interaction (not usually tested in COVAR and Multiple Regression).

For all these reasons, and because of the restrictive requirements of the alternatives, the ANOVA procedure was selected as the most suitable means to control extraneous variables, and supply the most precise test of group differences.

## 2 Discriminant Function Analysis DFA

The major limitation on conducting elaborate and extensive DFA on the present data is the relatively small number of subjects available (36).

Essential limitation outlined above for COVAR are also present and aggravated in the multivariate case, particularly when subject numbers are small. Another restriction is contained in the number of predictive variables which can be used. The DFA with 36 subjects requires the solving of 36 simultaneous equations which have 36 unknown values (the coefficients and constant), and so a maximum of 35 variables may be considered if no error variance is assumed. Allowing 'room' for error variance has led to the principle of having five to seven times as many subjects as variables in multivariate analysis (Overall and Klett, 1972). In the present data then, it is only realistic to expect a DFA with more than approximately seven variables to be unstable, non-replicable and of little use. One could, given sufficient theoretical reasons, pick the expected best six predictors and perform the DFA. Another alternative adopted here, is to select more than the optimum number as having theoretical importance, and then step

the variables into the DFA equation (in order of expected importance) and only enter a variable if it makes some contribution to the discrimination of the group ( $F > 1$ ). If it does not improve discrimination, the variable is by-passed and the next is checked and so on. The initial pool of 15 variables was selected in the present study with the intent that only six (or fewer) variables would be retained, hence have a reasonable likelihood of being a stable solution. Even so, given the requisite assumptions for the analysis, it is probably best to err on the conservative side and treat the DFA results as more descriptive (i.e. only applies for the present groups), than predictive in the widest sense. Similarly, it was considered unwise to conduct extensive data sifting beyond checking the theoretical importance of the variance selected. Such is very prone to the effects of chance factors, and the results obtained from such analyses, need to be considered as spurious and of little value (Overall and Klett, 1972).

#### References

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## Appendix H Self Directed Behaviour Questionnaire

<u>SUBSCALE</u>	<u>ITEMS</u>
Appropriate Dependence	2,3,5,7,9
Inappropriate Dependence	1,4,6,8,10
Autonomous Achievement	11,12,13,14,15

SELF DIRECTED BEHAVIOUR QUESTIONNAIRE

INSTRUCTIONS: Using the 5 point scale below, rate the individual on the 15 questions. Be sure to read the definition of each question and select the number that best describes the trainee's usual behaviour.

- 5 Very Often and Very Persistently
- 4 Often and persistently
- 3 Occasionally and Little persistence
- 2 Very Rarely and Without Persistence
- 1 Not at all.

- 1 How often does the individual seek help unnecessarily?

This behaviour defined as any inquiry or request for assistance that is not necessary because the person has previously demonstrated the ability to do the job themselves i.e. asking someone else to get needed materials/tools for them.

- 2 How often does the individual seek help when it is required?

Defined as any request or inquiry that is likely to improved the trainee's performance on the task e.g. seeking guidance in a task they are unsure of, seeking clarification of orders.

- 3 How often does the individual seek recognition in an acceptable way?

That is, asking their supervisor to examine their work for the purpose of quality control, or other activity that is designed to elicit some indication of performance level.

- 4 How often does the individual seek recognition unnecessarily?

This category covers those behaviours designed to gain attention from the supervisor by, for example, performing the work badly, or failing to perform work assigned. The action must be seen to be deliberate.

- 5 How often does the individual demonstrate the ability to consider other people's needs?

Defined as conforming to a group decision to allow the smooth running of the work site. e.g. taking lunch breaks when others do.

- 6 How often is the individual influenced in an unacceptable manner by the action of others?

In this category is any behaviour that is likely to have a negative influence on the individual's work and/or may endanger those people around him e.g. acting foolish or playing pranks on others.

- 7 How often does the individual seek attention in acceptable ways?

That is, by initiating or maintaining conversations, by offering assistance when it is needed etc.

- 8 How often does the individual seek attention unnecessarily?

That is, try to attract supervisors, or other workers attention by being disruptive e.g. talking loudly, yelling, abusing surrounding workers; throwing materials etc.

- 9 How frequently does the individual seek to be near others in an acceptable way?

Near is defined as in close proximity to, not necessarily sitting next to but maintaining a reasonable social distance e.g. sitting with others at lunch/tea breaks, works with others if job allows.

- 10 How often does the individual seek to be near others in a manner not socially acceptable?

By socially acceptable is meant in a manner that makes the people around the person uncomfortable, or which would make the person conspicuous in a social setting e.g. continually following members of staff, being unable to work unless sitting next to a particular person. It may or may not involve talking with the people the trainee follows.

- 11 How often does the individual derive satisfaction from his work?

Basically satisfaction should be judged by the individual's ability to maintain attention to a task or activity without asking for praise or other forms of attention seeking, disturbance, or other irritation, or leaving the task prematurely.

- 12 How often does the individual demonstrate initiative in carrying out routine tasks?

Is it necessary for a supervisor to prompt the person to begin work with tasks done frequently can the individual follow a daily routine, be on time for work and appointments and manage his or her self-help skills independently.

- 13 How often does the individual attempt to independently overcome environmental obstacles?

Here, obstacle means any circumstance which prevents the individual from engaging in a task or activity e.g. a necessary tool, a misplaced coat. Consider the extent to which the individual will attempt to overcome the obstacle and return to continue or commence the activity he/she was assigned to do.

- 14 How often does the individual demonstrate initiative in carrying out his own activities?

Can the individual meaningfully occupy himself during free time periods e.g. lunch time. Is he able to participate in planning activities if given the opportunity?

- 15 How often does the individual complete an activity?

Of interest here is the extent to which the individual will carry out the assigned task to completion. This is distinct from disinterest or distraction or becoming bored. The criterion is simply the frequency with which the individual carries work or activities to completion within a reasonable period of time.