

PERCEPTIONS CONCERNING PHYSICALLY DISABLED STUDENTS
AT MONTANA STATE UNIVERSITY

by
Ronald Lee Currie

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APPROVAL

of a professional paper submitted by

Ronald Lee Currie

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5/8/90
Date

Doug Polito
Chairperson, Graduate Committee

Approved for the Major Department

5/8/90
Date

Doug Polito
Head, Major Department

Approved for the College of Graduate Studies

May 18, 1990
Date

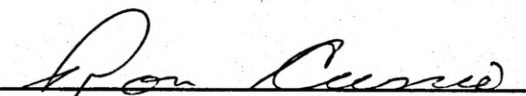
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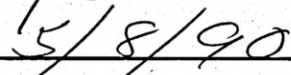
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ABSTRACT

The purpose of this study was to determine whether physically disabled students enrolled during autumn quarter 1989 at Montana State University, who were registered with the Resource Center Office of Disabled Student Services at Montana State University and Montana Vocational Rehabilitation Services, and who have non-visible trauma-or illness-induced disabilities, experience different interactions in dealing with faculty and staff at Montana State University than do physically disabled students with visible trauma-or illness induced-disabilities.

Data for this study were gathered by a mailed questionnaire sent to students enrolled at Montana State University during autumn quarter 1989 with trauma-or illness induced-disabilities. Usable responses were received from 30 non-visibly physically disabled students and 16 visibly physically disabled students. Data were gathered in five areas: (1) demographics, (2) ability to perform in the academic environment, (3) relationships to faculty and staff, (4) availability of services, and (5) student's personal comments and insights.

The mean scores from the data gathered were analyzed using the t-test at the .05 level of significance. Real limits were established and notable differences were utilized for interpreting some of the data.

Analysis of the data revealed that non-visibly physically disabled students experienced chronic pain that complicated their ability to perform academically significantly more often than visibly physically disabled students. Overall, non-visibly physically disabled students did not experience greater difficulty functioning in the academic environment than did visibly physically disabled students. Although non-visibly physically disabled students did not experience higher perceived levels of discrimination in their relationships with faculty and staff than visibly physically disabled students, difficulties do exist for both groups within some departments.

CHAPTER 1

THE PROBLEM AND ITS SETTING

Introduction

University students deal with strenuous academic demands and varying degrees of financial pressures, as well as social and personal issues. Disabilities may compound these issues and further complicate their opportunities for academic success.

The person who has experienced life as a whole functional individual and who then suffers an accident or illness that has left her/him disabled is often forced to cope with overwhelming pressures associated with rebuilding her/his life and retraining the mind and body. For the person who has a non-visible physical disability such as epilepsy, some forms of spinal injuries, cancer, hearing loss, or arthritis, additional pressures come into consideration. Cues ordinarily used to form expectations of others are not usable if the other person is, for instance, culturally different, retarded, deaf, mute, or physically different (Fender, 1979). Without the visible cues ordinarily used to form expectations of others, students with non-visible disabilities are continually required to validate their disabilities. As Sarason, (1981) notes, "It is here that

they [school personnel] learn there are at least two types of human beings and if you choose to work with one of them you render yourself legally and conceptually incompetent to work with the others" (1982, p.258). Barrier-free facilities constitute only a part of the true meaning of accessibility (Kercher, 1989, P. V). University faculty and staff are in a position of power to control the academic opportunities and options available to the disabled student. It is crucial to the academic success of students with non-visible disabilities that University faculty and staff possess accurate perceptions regarding the actuality and ramifications of their disabilities.

In many ways students with disabilities are not unlike other students. They have the same needs: the need to be challenged, to be part of a group, to be accepted, and to succeed. These students wish to be treated as individuals and not to be singled out or stereotyped as disabled (Kercher, 198,9 p. 1).

Dr. Lynda Ziegahn of the Kellogg Center for Adult Learning Research at Montana State University, who is non-visibly disabled, shared the following observations:

The person who is not physically disabled has no common basis on which to relate to the disabled persons. Their ignorance often results in misguided assumptions, that insult, offend, or diminish our worth as human beings.

A common misconception is that the physically disabled person who does not appear to be disabled and who asks for special consideration is vying for commiseration or attempting to exploit the system.

Purpose of the Study

The purpose of this study was to determine whether disabled students enrolled during autumn quarter 1989 at Montana State University and who were registered with the Resource Center Office of Disabled Student Services at Montana State University and Montana Vocational Rehabilitation Services and who have non-visible trauma-or illness-induced physical disabilities experience different interactions in dealing with faculty and staff at Montana State University than do physically disabled students with visible trauma-or illness-induced injuries.

Statement of Need

The physically disabled student who is in need of special services but lacks outward signs of the disability, and who must inform others that she or he is legitimately disabled is forced to continually substantiate that her or his incapacity exists. In dealing with faculty and staff who are in positions of authority, the student who lacks visible outward signs of disability is placed at still another disadvantage. If the faculty or staff person has inaccurate perceptions or preconceived biases, additional unjustified pressures are placed on the physically disabled student, who may have little emotional reserves left to cope with still another external

pressure. A review of the current literature reveals little information that acknowledges the possible existence of this field of study, but after conducting pre-study interviews with physically disabled students and recent graduates of post-secondary institutions in Montana during the spring and summer of 1989 (Interviews), a common consensus of those students who lack visible signs of disability emerged that they are discriminated against by faculty and staff. The areas of conflict take many different forms. The most common are a lack of instructor willingness to allow alternative learning projects; difficulties encountered in obtaining parking permits; a lack of cooperation in changing testing procedures for those who cannot sit for extended periods of time such as for two-hour final exams; and a lack of specialty service personnel, such as readers for the visually impaired and note takers for students who are unable to do so for themselves. The problems that these students encounter, even though diverse, have a common theme. Faculty and staff, as a whole, appear to place considerable emphasis on visual cues to assist them in making decisions that affect physically disabled students.

Objectives

The objectives of this study were as follows:

1. to determine if differences exist between the entire identified non-visibly and visibly physically disabled student

population at Montana State University as to their ability to perform in the academic environment;

2. to determine the perceptions of the entire Montana State University student population with non-visible trauma-or illness-induced physical disabilities as to their interactions with faculty and staff;

3. to determine the perceptions of the entire Montana State University student population with visible trauma-or illness-induced physical disabilities as to their interactions with faculty and staff;

4. to determine if differences exist in perceptions between the two groups regarding their interactions with faculty and staff.

Hypotheses

The following hypotheses were examined to determine if any significance occurred at the .05 level using a t-Test for determining differences between group means:

H_0 : There will be no significant differences between non-visibly and visibly physically disabled students in their ability to perform in the academic environment;

H_0 : There will be no significant differences between non-visibly and visibly physically disabled students in their relationships to faculty and staff;

H₀: There will be no significant differences between non-visibly and visibly physically disabled students in their ability to acquire services.

Definitions of Terms

The following definitions have been selected as descriptive of this particular study, and pertain only to this study:

1. Physical Disability: The loss of an ability, or the acknowledgement of an incapacity (Burk, 1989).
2. Handicap: A compensation, bonus, or pre-assessed advance that will make one equal with others (Burk, 1989).
3. Visible Disability: An inability or incapacity that is apparent or observable to others.
4. Non-visible Disability: An inability or incapacity that is neither readily apparent nor observable by others.
5. Trauma Induced Disability: An injury that results in the loss of ability to function as a whole person (McKenzie, 1990).
6. Degenerative Disability: The deterioration of a person's mind or body due to a disease, resulting in partial or total loss of one's ability to perform as a whole functional human being (McKenzie, 1990).
7. Faculty: All teachers, instructors, and professors that are directly involved in the education process at Montana State University during autumn quarter 1989.

8. Staff: Those persons not directly involved in the education process, such as clerical workers and law enforcement personnel at Montana State University during autumn quarter 1989.

Limitations

The following limitation was placed upon this research: Only Montana State University students with trauma-or illness-induced physical disabilities who are registered with the Resource Center Office of Disabled Student Services and the Montana State Department of Vocational Rehabilitation Services enrolled during autumn quarter 1989 were surveyed.

Assumptions

The following assumptions were made:

1. A population of students enrolled at Montana State University who have visible and non-visible physical disabilities can be identified through the Resource Center Office of Disabled Student Services and the Montana State Department of Vocational Rehabilitation Services;
2. There is interaction among faculty, staff and physically disabled students at Montana State University.
3. Disabled students at Montana State University with non-visible physical disabilities may be treated differently by faculty and staff than those students with visible physical disabilities.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Introduction

The intent of this chapter is to present an historical overview on how cultural perspectives have shaped attitudes toward the disabled, to describe the dynamics involved for the disabled in learning to cope with a trauma-or illness-induced disability, and to explore how societal attitudes complicate the disabled person's ability to function within society.

A Historical Perspective of Classification and Labeling

Categories and labels are powerful instruments for social regulation and control, and they are often employed for obscure, covert, or hurtful purposes: to degrade people, to deny them access to opportunity, to exclude 'undesirables' whose presence in some way offends, disturbs familiar custom, or demands extraordinary effort (Hobbs, 1974 p. 11).

People almost instinctively react to those who are different (Hobbs, 1974). Individuals are often ill at ease with those who are crippled, deformed or otherwise different. Examples of this unfortunate cultural truism are evident in the rejection of people who are regarded as strange in language, custom, or appearance, such as those members of

different ethnic or racial groups. In some cases, like Nazi Germany in regard to the Jews, classifications and labeling were used deliberately as instruments of public policy to feed on private fears (Hobbs, 1974).

The function of social control through the use of labeling and classification is exercised typically without a high level of personal awareness. Conscience quieting is a term coined to identify a denial mechanism used by those who seek to legitimize the attitude of rejection. For instance, "the rejected themselves are blamed for acting in such a way that exclusion is considered to be caused by them rather than by other means" (Fender, 1979, p.14). This is a classic example of blaming the victim. Another rationale for conscience quieting is that the process of labeling is used with the belief that such societal labels are in the best interest of the person. In reality, cost or convenience are the primary factors for the use of societal labels (Fender, 1979). Normality and exceptionality (or deviance) are not absolutes; both are culturally defined by particular societies at particular times for particular purposes (Benedict, 1934). "The adult or child who has difficulty in functioning in supposedly normal circumstances is viewed as inadequate and incapable of utilizing the existing opportunities" (Fender, 1979, p.14).

Many philosophical biases and doctrines have served to preserve the dominance of an established majority. One of

Social Darwinism's pretexts states that society is an organism subject to natural selection as are plants and animals. The preservation of unfit humans serves to damage society, in the views of Social Darwinists.

Religious doctrines, such as predestination and foreordination, have strongly influenced attitudes towards the disabled. Embodied within these concepts are the notions that the elite are identified by their success and the damned by their lowly circumstances. Therefore, persons less than perfect were victims of their own sin and were unworthy of saving (Fender, 1979). Classification or labeling increases the psychological distance between the threatened individuals and the disadvantaged person who is the source of the original anxiety. The average individual, therefore, has no bonds with the disabled person because she or he has had little experience with them. The disabled are perceived as being categorically different, and people are unable to involve themselves effectively in humane treatment of the disabled (Hobbs, 1974). Contacts with stigmatized or different individuals are threatening when established patterns of interaction fail. Many persons find themselves feeling awkward, fearful, or self-conscious when interacting with persons with disabilities (Kercher 1989 P. 1). These factors can create anxiety and frustration for those involved. Persons born disabled have very different adjustments to make than someone who was not born disabled but has become so.

Coping with Disabilities

The researcher believes that disabilities and handicaps are possessed by each of us. There is one thing or another that we are unable to perform, and there are devices which we use to allow us to participate in activities on a basis equal to others (Burk, 1989). A disability can be defined as an incapacity or the absence of ability. This accurately describes the condition of people who are limited due to physical injuries or illnesses that have left them without total function or mobility.

To in some way return all or part of the ability to function as whole persons is referred to as being handicapped. A handicap is a device which lifts an individual from the disability and returns ability to the person. "A handicap is a compensation, bonus, or reassessed advance to make one equal with others" (Burk, 1989).

Recovery from a physically disabling injury or illness is a complex process that affects every dimension of a person's life and the lives of those intimately associated with the disabled person. As Heinemann, (1983) so intuitively noted, a necessity exists that the patient be capable and able to mourn the loss of the capacity to function, before the emotional healing process can begin.

As the process of coping begins, the person may experience anger, which may be directed externally in an effort to attach blame for the accident or illness; the

person may also place blame on circumstances, such as road conditions, unguarded machinery, or possibly a virus or predisposition to disease. Intense anger and blame may be focused on others as well. A physically disabled student who had been injured in a mill accident stated in a personal interview, "The jerk turned and looked at me, and pushed the button starting the conveyor chain, I was struck by a log, and it crushed two discs in my back" (Don Bell, 1989). A study undertaken by Sholomskas (1987) found that blaming others was related to poor coping, because it interfered with assuming responsibility for getting well and impeded the rehabilitation process.

If the disabled person was religious, an interesting phenomenon may occur. In some cases, the person may feel that she or he was being punished for transgressions of God's laws. The injured party may feel a sense of relief that the score had been evened, or may feel anger toward God that she or he had been harshly judged. Finally, the person may believe she or he was a victim of pre-destination, and that the event was unavoidable (Russell, 1988).

Self-blame is affected by many factors. If the person was alone at the time of the accident, then self-blame may enter the picture. The person's mood, sense of control, and the perceived degree of avoidability of the accident can mediate how harshly the person chooses to administer self-blame. Sholomskas (1987) attempted to find a positive

correlation between self-blame and effective coping; however, no supporting data were found. Sholomskas' assumption prior to the research findings was that self-blame returns a sense of control to the person and can play a crucial role in the person's ability to adjust to the disability. Sholomskas (1987) viewed self-blame as dysfunctional and related to depression.

One point of agreement within the literature lies in the importance of disabled persons accepting responsibility for their health and rehabilitation. This acceptance entails expending effort, cooperating with treatment, and accepting limitations of what they can or cannot do. The issue of accepting limitations can be very difficult indeed for the person who has experienced life as a whole functional person, and who is now facing a disabling injury or illness. There is no clear method to help the physically disabled person effectively cope with the loss and rehabilitation process. Present clinical practices virtually ignore individual coping differences and focus on generic, universal responses.

Chronic pain complicates normal functioning for some physically disabled persons. Kathleen Perry, who suffers ankle, leg and spinal injuries from a farm accident, the following comments were made: "Some days it hurts so bad I want to give up...What is the purpose anymore?" Chronic pain affects not only physically disabled persons but those associated with them on an intimate level, especially their

immediate families. Chronic pain affects finances, decreases the frequency of family trips and outings, disrupts or prevents sexual relationships, shifts the burdens of responsibilities, and produces tension within the family (Moore and Chaney, 1985).

Chronic pain sufferers develop both cognitive and behavioral coping strategies. A few of these coping strategies use distracting measures to remove the focus from the pain. Reinterpretation of the cause or source of the pain or disability can be effective but some cautions exist. If the pain is reinterpreted as pressures from external factors, such as viewing a companion as critical or difficult to live with when the real problem is pain, serious problems often develop. For the disabled person, still other methods of pain management may involve praying, meditation, or calming statements. A serious problem with many chronic pain sufferers is drug and alcohol abuse as an alternative means to medicate the pain. The long-term prognosis for this method of coping with chronic pain is extremely poor. Chronic pain sufferers may also develop compulsive disorders, such as alcoholism or excessive eating. The latter can lead to increased pain and stress on the person due to resulting obesity (Keefe, 1987).

Physically disabled persons are faced with forced changes in their lifestyles. What was once familiar and comfortable has changed drastically. Simple tasks, such as mowing the

lawn or taking a bath, may become insurmountable obstacles. Even dressing without help may not be possible. Physical ability is often equated with success and happiness. In 1978 in Polson, Montana a former biologist for the Montana State Department of Fish Wildlife and Parks, Bob Millhouse, who was dying of a neuro-muscular disease stated, "I have seen all the masks of my life taken from me. I am no longer Bob the outfitter, welder, teacher, and school bus driver. I have come to know myself. Few people ever have this chance."

Possibly the most traumatic change for many disabled people is the loss of identity that may come as a result of forced changes in lifestyle, employment and ability. Suddenly their self-concept must be re-evaluated. At this point, some physically disabled people will not be able to let go of their self-concept and will attempt at all costs to keep their memories a reality (Rounds, 1986). Suicide is often considered as an option at this point. Social support and acceptance is crucial to assist in rebuilding the self-concept and related self-esteem of the physically disabled person. Social networks can help the person begin to build compensatory skills. The person's social support network can consist of family, friends, work associates, and people within the community who associate with the person. Often family and friends attempt to take control and shield the individual from additional stresses and pressures to the point of making major decisions that affect the disabled person's life (Rounds,

1986). In all cases, the disabled people must be encouraged and allowed to determine the direction they will assume in rebuilding and regaining control over their lives. Students with disabilities are frequently experts regarding their condition and can often suggest solutions for problems that may hinder progress (Kercher, 1989, p. 1).

Traditional approaches to assisting the physically disabled student focus on moving the person toward a realistic assessment of the injury and its consequences (Frank, 1987). According to Sholomskas and Steil (1987), Bulman and Wortman, (1977) reported that unrealistic beliefs among spinal cord injury victims regarding their efforts and the likelihood of improving led to better coping. The researchers concluded that the creation of illusions acts as a buffer to reality and reduced the psychological consequences of the injury. There may be possible short-term value in this theory, but this researcher questions whether long-term benefits can result from nurturing the denial of reality.

Societal Attitudes and Coping Pressures

Retraining for new skills is often necessary for many physically disabled persons to provide them with some level of financial independence. Often, however, the physically disabled person wants to begin the retraining too soon after the onset of the disability. If formal schooling is chosen, rigorous academic demands are placed on the new student who

may not be adjusted to the reality of her or his disability. Laurie Gaffney, resource specialist for the Resource Center Disabled Student Services at Montana State University, placed high emphasis on the correlation between student success and allowing time to heal emotionally as well as physically before entering school. The adjustment period in order to accept the new disability demands much of the person's psychological and emotional resources, leaving little if any reserves for addressing further responsibilities and the pressures associated with survival within the academic system.

Financial difficulties rank high on the list of reasons students drop out of school. Frequently, short-term finances are procured with the illusion that something will come along to meet the need (Gaffney, 1989). Neglecting to develop a long-term financial plan will invariably assure major difficulties and probable failure. In many cases, funding can be secured from Social Security Disability or Vocational Rehabilitation programs, but these monies are often inadequate and late in arriving (Gaffney, 1989).

The support and commitment of one's family and especially one's spouse (if applicable) may be crucial to the new student's success. Without the positive commitment of the family, failure may be likely. Much of the student's time and attention is by necessity redirected to academics. This time away from the family can be perceived as a threat and is difficult to alleviate, especially when even more attention

must be given to caring for the disability (Moore and Chaney, 1985).

Perceptions of her or his own disability for the physically disabled student can vary dramatically. The disabling condition can be viewed as a tool to acquire needed or wanted resources, advantages, compassion and/or empathy. On the other side of the spectrum are students who are embarrassed or ashamed of their disability and who are reluctant to admit that it exists. All of these feelings can be experienced at various times by any physically disabled student.

Non-Visible Physical Disabilities

The physically disabled student who has a non-visible disability faces a unique dilemma. Such a disability may be extremely acute at different times and in remission at others, as is the case with many forms of spinal injuries as well as many degenerative diseases. The disabled often experience severe pain, numbness, or loss of mobility, but remission of the illness will allow almost normal functioning at other times. Many of the non-visibly physically disabled must live with chronic pain that clouds all dimensions of their lives. The pain dictates what activities they can or cannot do and how long they may sit, stand, or walk. Even their diet may be dictated by the pain, which may worsen under the burden of the added stress of tests or papers. Finally, embarrassment

or pride can prevent disabled people from admitting their disability and prevent them from seeking help. "Students with disabilities often resist the process of identification and/or accommodation to avoid being labeled" (Kercher, 1989, p. 2).

Often reluctance to identify their non-visible disability is a defense mechanism that has been acquired by being discriminated against when trying to use the system, or by having their needs disregarded because they lack the necessary external cues that inform people that a disability exists (Fender, 1979). Disregard for the non-visibly physically disabled student's needs can extend to family, friends, peers, faculty, staff, administration, and employers. Physically disabled students may continually be required to validate their disabilities to those who influence their academic, economic, and social success. A serious problem that can affect students involves faculty and staff who may be uninformed about, ignorant of, or biased against the needs of the non-visibly physically disabled student, and who, as a result, can be unwilling to expend extraordinary effort by offering alternatives or assisting these students by adjusting pertinent policies and procedures. Academic requirements must be modified, on a case-by-case basis, to afford qualified handicapped students and applicants an equal educational opportunity (Kercher 1989 p.31).

Attitudes resulting in behavior changes, are formulated throughout our lives as we encounter various situations or

acquire and process information. Attitude is a preparatory state rather than an overt act, a precondition to behavior rather than a behavior (Allport, 1967). Each of us at sometime in our lives has made a judgment based on erroneous information. Misconceptions are not the exception with regards to the physically disabled. Attitudes can be manifested in misguided compassion, lowered expectations, and unwarranted concerns, distrust, and avoidance of disabled person. Physically disabled students often require special considerations from faculty and staff to succeed in academic settings. They need to be challenged and allowed to achieve in a non-judgmental, supportive environment that encourages them to realize their potential.

Summary

Historically, cultural perspectives have shaped not only how society views disabled people but also how they view themselves. Categories and labels, are powerful instruments for social regulation and control, cutting across all segments of society. Physically disabled people are particularly impacted by these preconceived ideas, not only in their ability to confront society's perceptions and expectations, but also in their ability to cope with the disability.

CHAPTER 3

METHODOLOGY

Population Description

The Resource Center Office of Disabled Student Services at Montana State University was contacted in July, 1989 to request assistance in identifying and surveying the physically disabled student population enrolled at Montana State University during autumn quarter 1989. Permission to survey the physically disabled student population and a commitment to assist in the study was granted in July, 1989 by the Resource Center Office of Disabled Student Services at Montana State University. Therefore, the entire identified physically disabled student population was included in the survey.

The Montana State Office of Vocational Rehabilitation Services in Bozeman, Montana was also contacted in July, 1989 to request assistance in further identifying and surveying the physically disabled student population enrolled at Montana State University for Autumn quarter 1989. Permission to survey the physically disabled student population and a commitment to assist in the study was granted in September 1989 by the Montana State Vocational Rehabilitation Services. The Montana State Department of Vocational Rehabilitation

Services requested releases of information from all clients registered with its office who were to participate in the survey, thereby releasing their office from breach of confidentiality. Only those students who signed releases of information were included in the study. To maintain confidentiality, the actual survey mailings were handled by the Montana State University Office of Disabled Student Services and the Bozeman Office of The Vocational Rehabilitation Services.

Sampling Procedure

Due to the limited size of the study population, the researcher chose to survey the entire identifiable physically disabled student population enrolled at Montana State University during autumn quarter 1989. All physically disabled students registered with the Resource Center Office of Disabled Student Services at Montana State University were surveyed. Artificial constraints were introduced by the Montana State Department of Vocational Rehabilitation Services that significantly reduced the identifiable population available for the survey. That Department requested releases of information from all clients who were to participate in the survey, thereby releasing their office from breach of confidentiality and reducing the total identifiable physically disabled student population from the estimated 100-150 to an actual 88 participants.

Instrument Design

The researcher, with assistance from his graduate committee, designed a survey instrument (Appendix A). The survey instrument contained 11 questions covering demographics, 5 questions that addressed the student's ability to perform in the academic environment, 11 questions that concerned the student's relationships to faculty and staff, 1 question regarding the availability of physically disabled student services, and the student's personal comments and insights regarding her or his experiences at Montana State University. Physically disabled students were asked to answer questions on a Likert scale rating as to their perceptions of the frequency or degree to which they had been impacted by these various issues during autumn quarter 1989 at Montana State University (Appendix A p.71). The Likert scale questions, numbering 12 through 28, were evaluated as follows: 1.00 = never, 2.00 = seldom, 3.00 = sometimes, 4.00 = often, 5.00 = always. Demographic questions required open form answers.

To verify readability and clarity of the instrument, a sample survey of five randomly selected physically disabled students was conducted at Montana State University on October 10, 1989. No major changes were made on the survey instrument following the sample survey. The results of the sample survey were included in the actual survey count, as they met all criteria for inclusion within the study.

Data Collection

On October 15, 1989, the segment of the survey involving the Office of Disabled Student Services at Montana State University was mailed with an accompanying cover letter (Appendix B). Due to delays in receiving releases of information from clients of the Vocational Rehabilitation Services that portion of the survey was not mailed until November 30, 1989.

The possibility of duplicate mailings to participants who were listed with both the Disabled Student Services and The Montana Vocational Rehabilitation Services was addressed in the cover letter, instructing the participants to return the unmarked duplicate questionnaire for tabulation purposes. Again, to maintain confidentiality, the actual survey mailings were handled by the Disabled Student Services and the Bozeman Office of Vocational Rehabilitation Services. A second mailing and follow-up letter (Appendix C) were sent to clients of Vocational Rehabilitation Services on December 15, 1989 due to the low rate of returns received for this group to that date. The response to the second mailing produced four blank returns, indicating duplicate mailings, and three completed responses. Due to the return rate for the clients of Disabled Student Services, a second mailing was not done for this portion of the study. Duplicate mailings were deleted from the total survey mailing and returns, leaving 88 actual mailings. A return of 46

completed questionnaires were received by mail. All 46 were usable for data analysis.

Data Analysis

The Montana State University computer program MSUSTAT: Statistical Analysis Package (Lund, 1988) was used for creating data files. The data was analyzed using the MSUSTAT programs SUMSTAT and TGROUPEd. Means, standard deviations, and t-Tests were used to analyze the data. Means and t-Tests were used for comparing the two groups of respondents. The variables contained in questions 12 through 28 were analyzed to determine significance at the .05 level utilizing a multiple comparison method. It has been conventional in behavioral sciences research work to use the 0.05 and 0.01 levels of significance. Some researchers contend that these arbitrary levels should be maintained, for otherwise researchers might be inclined to reject null hypotheses with 0.06, 0.09, 0.10, 0.12 or similarly varied significance levels (Popham, 1967, p.53). This method, according to Lund (1988), "provides means and mean differences for all possible pairs, ordinary t-statistics and T-values, and Q-statistics applicable to a table of studentized ranges" (p. 4-34). This method is termed the level of significance or statistical significance (Leedy, 1981). This method was used because of unequal replication in the samples. The standard deviation aids the researcher in determining how distant individual

scores are from the mean itself. We need therefore two symbols to identify the mean: one for the sample mean, and the other for the population mean (Leedy, 1981, p.107). The population mean is called the standard deviation. The data obtained from the analysis of the variables were used to construct the tables for this study.

Tables 1 through 11 deal with demographic data. The data contained in Table 13 deals with the student's ability to perform in the academic environment. The survey questions contain response means, standard deviations, and t-Test values to survey questions. These responses indicate the perceptions of physically disabled students enrolled during autumn quarter 1989 at Montana State University. Questions were evaluated on a Likert scale as follows: 1.00 = never, 2.00 = seldom, 3.00 = sometimes, 4.00 = often, 5.00 = always.

The data contained in Table 14 categorize 5 questions that deal with the relationships of physically disabled students to faculty and staff. The perceptions of physically disabled students were evaluated on a Likert scale as follows: 1.00 = never, 2.00 = seldom, 3.00 = sometimes, 4.00 = often, 5.00 = always. The t-Test was computed at a level of significance of 0.05 on the comparison of two groups--non-visibly physically disabled and visibly physically disabled--to determine if a significant difference between the means of the two groups existed. Popham (1967) states that the

size of t varies with the degrees of freedom, this being the size of the population sample. For this population sample, a t of 2.042 was determined from tables at a significance level of 0.05 Popham, (1967, p.131). Wolport (1984) stresses the difference between statistical and practical significance and further points out that it is possible to have findings that are statistically significant but have no practical significance. Yost (1988) also points out the need to distinguish between statistically significant differences and meaningful differences. A similar opinion was expressed by Key (1989) when he proposed the use of notable differences for certain situations:

As with the statistical significance level, the parameter notable level is simply a way the researcher tells the reader this is the magnitude of the difference required to ultimately consider these means different for the populations being tested.

Throughout the remaining chapters of this paper, differences that are considered practical or meaningful will be referred to as notable differences. Due to the descriptive nature of this study and various statistical references used, this approach is appropriate and well-suited.

CHAPTER 4

RESULTS AND ANALYSIS

The results of this study are presented in five sections: (1) demographic data, (2) ability to perform in the academic environment, (3) relationships to faculty and staff, (4) availability of services, and (5) student comments and insights.

Demographic Data

For this study, 88 physically disabled students, enrolled during autumn quarter 1989 at Montana State University, were surveyed. Tables 1 through 11 deal with demographic data. As shown in Table 1, a total of 88 survey instruments were sent to physically disabled students enrolled at Montana State University during autumn quarter 1989. Of the 88 instruments sent, 46 were returned, indicating a 52 % response rate. Although not all questions were addressed by all respondents, all returned instruments were usable. As shown in Table 1, a total of 30 (65%) students were non-visibly physically disabled. As further shown in Table 1, a total of 16 (35%) students were visibly physically disabled students. The number of participants for each of these two groups was not known by the researcher.

When comparing the data in Table 1, it was noted by the researcher that the response rate for non-visibly physically disabled students was nearly double the rate for visibly physically disabled students.

Table 1. Response to Questionnaire.

Population	Number Surveyed	Number of Responses	Percentage
Respondents	88	46	52
Non-visibly Disabled	**	30	65
Visibly Disabled	**	16	35

** The actual number surveyed in this category was unknown.

Table 2. Sex of participants.

Categories	N=46	N	%
Non-Visibly Disabled:			
Female		11	37
Male		18	60
Not reporting		1	3
Category total		30	100
Visibly Disabled:			
Female		3	19
Male		30	81
Category total		16	100

The data in Table 2 indicate responses to question 1 of the survey instrument, What is your sex? For the non-visibly physically disabled students, 11 (37%) of the respondents were female and 18 (60%) were male. Those not

reporting in this category accounted for 1 (3%) of the category total. The data in Table 2 also indicate that of the visibly physically disabled respondents, 3 (19%) were female and 13 (81%) were male.

Table 3. Marital status

Categories	N=46	N	%
Non-Visibly Disabled:			
Married		14	47
Single		15	50
Not reporting		1	3
Category total		30	100
Visibly Disabled:			
Married		4	25
Single		12	75
Category total		16	100

The data in Table 3 indicate responses to question 2 of the survey instrument. What is your marital status? For non-visibly physically disabled students, 14 (47%) of the respondents were married and 15 (50%) were single. Those not reporting in this category accounted for 1 (3%) of the total. The data in Table 3 also indicate that for visibly physically disabled students, 4 (25%) were married and 12 (75%) were single.

The data in Table 4 indicate responses to question 3 of the survey instrument, Is your disability visibly apparent to others? Data indicate that 30 (65%) of the respondents

were non-visibly physically disabled and 16 (35%) of the respondents were visibly physically disabled. All respondents answered question 3 of the survey instrument.

Table 4. Appearance of Disability.

Categories	<u>N=46</u>	N	%
Yes		30	65
No		16	35
Total		--	100

Table 5. Education prior to MSU.

Categories	<u>N=46</u>	N	%
Non-Visibly disabled:			
High School		16	54
Post Secondary		13	43
Not reporting		1	3
Category total		30	100
Visibly disabled:			
High School		11	69
Post Secondary		5	31
Category total		16	100

The data in Table 5 indicate responses to question 4 of the survey instrument, What was your level of education prior to coming to MSU.? Data indicates that 16 (54%) of non-visibly physically disabled students had high school educations and 13 (43%) had received some level of post-secondary education. Visibly physically disabled students

responded that 11 (69%) had high school educations and 5 (31%) had some level of post secondary education.

Table 6. Present year of attendance at MSU.

Categories	N=46	N	%
Non-Visibly disabled:			
First year		11	37
Two or more years		18	60
Not reporting		1	3
Category total		30	100
Visibly disabled:			
First year		2	12
Two or more years		14	88
Category total		16	100

The data in Table 6 indicate responses to question 5 of the survey instrument, What is your present year of attendance at MSU.? Data indicate that 11 (37%) of non-visibly physically disabled students were in their freshman year, and 18 (60%) had attended M.S.U. for two or more years. Those not reporting accounted for 1 (3%) of the category total. Visibly physically disabled students indicated that 2 (12%) were in their freshman year, and 14 (88%) had attended MSU for two or more years.

Table 7. Other post-secondary education.

Categories	N=46	N	%
Non-Visibly disabled:			
Yes		11	37
No		8	60
Not reporting		1	3
Category Total		30	100
Visibly disabled:			
Yes		6	38
No		10	62
Category Total		16	100

The data in Table 7 indicate responses to question 6 of the survey instrument, Have you had other post-secondary education since being disabled? Data indicate that 11 (37%) of non-visibly physically disabled students had received some post-secondary education since being disabled, and 18 (60%) had not received post-secondary education since being disabled. Those not reporting accounted for 1 (3%) of the category total. Visibly physically disabled students indicated that 6 (38%) had received some post-secondary education since being disabled, and 10 (62%) had not received post-secondary education since being disabled. The researcher observed no notable difference between the two groups in the data reported.

The data in Table 8 indicate responses to question 7 of the survey instrument, Please list the names of these

schools. Data indicate that 8 (27%) non-visibly physically disabled students had previously attended MSU, and 7 (23%) had attended some other post-secondary institution since being disabled. Those not reporting accounted for 1 (3%) of the category total. Visibly physically disabled students indicated that 2 (12%) had previously attended MSU, and 3

Table 8. Post-secondary institutions.

Categories	<u>N=46</u>	N	%
Non-Visibly Disabled:			
MSU		8	27
Other		7	23
None		14	47
Not reporting		1	3
Category total		30	100
Visibly Disabled:			
MSU		2	12
Other		3	19
None		11	69
Category total		30	100

(19%) indicated that they had attended some post-secondary institution since being disabled.

The data in Table 9 indicate responses to question 8 of the survey instrument, What is your current age? Data indicate that 4 (13%) non-visibly physically disabled students were less than 25 years old, with a mean of 20.3 years of age, and 25 (84%) were over 25 years old with a mean age of 37.4 years. Those not reporting accounted for 1 (3%)

of the category total. Visibly disabled students indicated that 5 (31%) of their group were less than 25 years old, with a mean of 21.8 years of age, and 11 (69%) indicated that they were over 25 years of age, with a mean of 33.0 years of age.

Table 9. Current age.

Categories	N=46		N	%	Mean
Non-Visibly Disabled:					
Less than 25 years			4	13	20.3
Over 25 years			25	84	37.4
Not reporting			1	3	--
Category total			30	100	33.9 ^a
Visibly Disabled:					
Less than 25 years			5	31	21.8
Over 25 years			11	69	33.0
Category total			16	100	29.5 ^a

^aDenotes a statistically significant difference between two variables.

In comparing both groups in Table 9, the researcher observed a notable difference between the two groups. The data indicate that non-visibly physically disabled students are on the average older than visibly physically disabled students.

The data in Table 10 indicate responses to question 9 of the survey instrument, How long have you lived in Montana? Data indicate that 8 (27%) non-visibly physically disabled students had lived in Montana less than 5 years, while 21 (70%) had lived in Montana for 5 years or more.

Those not reporting accounted for 1 (3%) of the category total. Visibly disabled students indicated that 1 (6%) of their group had lived in Montana less than 5 years, while 15 (94%) had lived in Montana 5 or more years.

Table 10. Length of residency in Montana.

Categories	N=46	N	%
Non-Visibly disabled:			
Less than 5 years		8	27
Over 5 years		21	70
Not reporting		1	3
Category Total		30	100
Visibly disabled:			
Less than 5 years		1	6
Over 5 years		15	94
Category Total		16	100

In comparing both groups in Table 10, the researcher observed a notable difference between the two groups. The data indicate that on the average, visibly physically disabled students have lived in Montana longer than students with non-visible physical disabilities.

The data in Table 11 indicate responses to question 10 of the survey instrument, What is your national origin? Data indicate that 23 (77%) non-visibly physically disabled students were Caucasian, while 4 (13%) were Native American, accounting for the only minority group to be identified. Those not reporting accounted for 3 (10%) of the category

total. Visibly physically disabled students indicated that 16 (100%) of this group identified themselves as Caucasian.

Table 11. National origin.

Categories	N=46	N	%
Non-visibly disabled:			
Caucasian		23	77
Native American		4	13
Other		--	--
Not reporting		3	10
Category total		30	100
Non-visibly disabled:			
Caucasian		16	100
Other		--	--
Category total		16	100

In comparing both groups in Table 11, the researcher observed that non-visibly physically disabled students were the only group showing minority representation, while visibly physically disabled students indicated a 100% caucasian population segment.

The data in Table 12 indicate responses to question 11 of the survey instrument, What is your specific disability? Data indicate that 6 (20%) non-visibly physically disabled students had sustained some form of spinal trauma, 5 (17%) had sustained some other trauma-related paralysis, and 18 (60%) had some type of degenerative disease. Those not reporting accounted for 1 (3%) of the category total.

Table 12. Specific disabilities.

Categories	N=46	N	%
Non-visibly disabled:			
Spinal trauma		6	20
Other trauma/paralysis		5	17
Degenerative disease		18	60
Not reporting		1	3
Category total		30	100
Visibly disabled:			
Spinal trauma		10	62
Other trauma/paralysis		4	25
Degenerative disease		2	13
Category total		16	100

Visibly disabled students indicated that 10 (62%) had sustained some form of spinal trauma, 4 (25%) had sustained some other trauma or paralysis, and 2 (13%) had some type of degenerative disease.

Ability to Perform in the Academic Environment

The data contained in Table 13 deal with the student's ability to perform in the academic environment. The survey questions contain response means, standard deviations, and t-Test values to survey questions. These responses indicate the perceptions of physically disabled students enrolled during autumn quarter 1989 at Montana State University. Questions were evaluated on a Likert scale as follows: 1.00 = never, 2.00 = seldom, 3.00 = sometimes, 4.00 = often, 5.00

= always. The t-Test value was computed at a significance level of 0.05 on the comparison of the two groups--non-visibly physically disabled and visibly physically disabled--to determine if a significant difference existed between the two means. Popham (1967) states that the size of t varies with the degrees of freedom, this being the size of the population sample. For this population sample, a t value of 2.042 was determined from tables at a significance level of 0.05 (Popham, 1967, p.131).

Question 12 of Table 13 asks, Do you experience pain or discomfort associated with your disability that makes it difficult to attend classes, take tests, or participate in class discussions? Non-visibly physically disabled students indicated a mean response of 3.27 with a standard deviation of (.94), and visibly physically disabled students indicated a mean response of 2.38 with a standard deviation of (1.03). There was a notable difference between the two groups as shown by the t value of 2.9620, indicating that non-visibly physically disabled students experience significantly more pain and/or discomfort associated with their disability than do visibly physically disabled students.

Question 14 of Table 13 asks, Has your disability made it difficult or impossible for you to meet course requirements? Non-visibly physically disabled students indicated a mean response of 2.67 with a standard deviation of (1.03), and visibly physically disabled students indicated

a mean response of 2.31 with standard deviation of (.79). There was no notable difference between the two groups as shown by the t value of (-.7877). It appears that non-visibly physically disabled students experience only marginally higher levels of difficulty in this area than do visibly physically disabled students. Both groups, however, do have levels of pain or discomfort, which complicate this area of the academic environment.

Question 25 of Table 13 asks, Do you feel confident that you will be successful in your educational efforts? Non-visibly physically disabled students indicated a mean response of 4.07 with a standard deviation of (1.34), and visibly physically disabled students indicated a mean response of 4.13 with a standard deviation of (1.36). There was no notable difference between the two groups, as shown by the t value of (.2181). It appears that non-visibly physically disabled students experience only marginally lower expectations of success in this area than do visibly physically disabled students. Both groups apparently have high expectations of success in their educational efforts.

Question 26 of Table 13 asks, Do you feel comfortable in the academic environment? Non-visibly physically disabled students indicated a mean response of 3.80 with a standard deviation of (1.16), and visibly physically disabled students indicated a mean response of 3.88 with a standard deviation of (1.09). There was no notable difference between the two

Table 13. Ability to perform in the academic environment.

Questions	N	Mean*	SD	t-Test**
12. Do you experience pain or discomfort associated with your disability that makes it difficult to attend classes, take tests, or participate in class discussions?				
Non-Visibly disabled:	30	3.27	.94	
Visibly disabled:	16	2.38	1.30	2.9620 ^a
14. Has your disability made it difficult or impossible to meet course requirements?				
Non-Visibly disabled:	30	2.67	1.03	
Visibly disabled:	16	2.31	.79	-.7877
25. Do you feel confident that you will be successful in your educational efforts?				
Non-Visibly disabled:	29	4.07	1.34	
Visibly disabled:	16	4.13	1.36	.2181
26. Do you feel comfortable in the academic environment?				
Non-Visibly disabled:	29	3.80	1.16	
Visibly disabled:	16	3.88	1.09	.8557
27. Do you wish you could return to your old job and/or lifestyle?				
Non-Visibly disabled:	29	2.60	1.65	
Visibly disabled:	16	2.81	1.33	-.2604

*Mean based on 1 = Never; 2 = Seldom; 3 = Sometimes; 4 = Often; 5 = Always.

**t-Test was computed at a significance level of 0.05 on the comparison of two groups, non-visibly physically disabled and visibly physically disabled.

^aDenotes a statistically significant difference between two variables.

groups as shown by the t value of (.8557). It appears that non-visibly physically disabled students are only marginally less comfortable in the academic environment than visibly physically disabled students.

Question 27 of Table 13 asks, Do you wish you could return to your old job and/or lifestyle? Non-visibly physically disabled students indicated a mean response of 2.60 with a standard deviation of (1.65), and visibly physically disabled students indicated a mean response of 2.81 with standard deviation of (1.33). There was no notable difference between the two groups as shown by the t value of (-.2604). It appears that non-visibly physically disabled students show a slightly lower desire to return to their old jobs and/or lifestyles than visibly physically disabled students. Both groups show little inclination to return to their former jobs and/or lifestyle.

Relationships to Faculty and Staff

The data contained in Table 14 categorize 5 questions that deal with the relationships of physically disabled students to faculty and staff. The perceptions of physically disabled students were evaluated on a Likert scale as follows: 1.00 = never, 2.00 = seldom, 3.00 = sometimes, 4.00 = often, 5.00 = always. The t-Test was computed at a significance level of 0.05 on the comparison of two groups - non-visibly physically disabled and visibly physically

disabled-- to determine if a significant difference between the means of the two groups existed. Popham (1967) states that the size of t varies with the degrees of freedom, this being the size of the population sample. For this population sample, a t of 2.042 was determined from tables at a significance level of 0.05 (Popham, 1967, p.131). The standard deviation aids us in determining how distant individual scores are from the mean itself. We need therefore two symbols to identify the mean: one for the sample mean, and the other for the population mean (Leedy, 1981 p.107). The population mean is called the standard deviation.

Question 13 of Table 14 asks, Are you treated fairly by faculty and staff in regards to your disability? Non-visibly physically disabled students indicated a mean response of 4.13 with a standard deviation of (.94), and visibly physically disabled students indicated a mean response of 4.38 with standard deviation of (1.09). There was no notable difference between the two groups as shown by the t value of (-.7877). It appears that non-visibly physically disabled students indicate that they are treated somewhat less fairly than are visibly physically disabled students.

Question 15 of Table 14 asks, Have faculty and staff been supportive and open to modifying course requirements to accommodate your special needs? Non-visibly physically disabled students indicated a mean response of 3.37 with a

standard deviation of (1.65), and visibly physically disabled students indicated a mean response of 3.69 with a standard deviation of (1.50). There was no notable difference between the two groups as shown by the t value of (-.4878). It appears that faculty and staff have been only marginally less willing to make concessions for non-visibly physically disabled students than for visibly physically disabled students.

Question 16 of Table 14 asks, Has it been difficult for you to ask for assistance from faculty and staff? Non-visibly physically disabled students indicated a mean response of 2.83 with a standard deviation of (1.34), and visibly physically disabled students indicated a mean response of 2.56 with a standard deviation of (1.36). There was no notable difference between the two groups as shown by the t value of (.9158). It appears that non-visibly physically disabled students do find it more difficult to ask for assistance from faculty and staff than do visibly physically disabled students.

Question 17 of Table 14 asks, Have you felt intimidated by faculty or staff that has prevented you from asking for special consideration to meet the needs associated with your disability? Non-visibly physically disabled students indicated a mean response of 2.20 with a standard deviation of (1.32), and visibly physically disabled students show a mean response of 1.81 with a standard deviation of (1.11).

Table 14. Relationships to faculty and staff.

Questions	N=46	N	Mean*	SD	t-Test**
13. Are you treated fairly by faculty and staff in regards to your disability?					
Non-Visibly disabled:	30	4.13	.94		
Visibly disabled:	16	4.38	1.09		-.7877
15. Have faculty been supportive and open to modifying course requirements to accommodate your special needs?					
Non-Visibly disabled:	27	3.37	1.65		
Visibly disabled:	15	3.69	1.50		-.4878
16. Has it been difficult for you to ask for assistance from faculty or staff?					
Non-Visibly disabled:	29	3.83	1.34		
Visibly disabled:	16	2.56	1.36		.9158
17. Have you felt intimidated by faculty or staff that has prevented you from asking for special consideration to meet the needs associated with your disability?					
Non-Visibly disabled:	29	2.20	1.32		
Visibly disabled:	16	1.81	1.11		1.2170
18. Do you feel comfortable talking with faculty or staff regarding the needs associated with your disability?					
Non-Visibly disabled:	29	2.93	1.44		
Visibly disabled:	16	3.63	1.41		-1.3840

Table 14. Relationships to faculty and staff.

Questions	N=46		N	Mean*	SD	t-Test**
20. Have you felt pressured by faculty or staff to meet unrealistic expectations?						
Non-Visibly disabled:	28	2.13	1.28			
Visibly disabled:	16	1.94	1.18			.9402
21. Are you required to validate your disability to faculty and staff in order to receive assistance?						
Non-Visibly disabled:	28	3.80	1.06			
Visibly disabled:	16	3.81	1.22			1.3190
22. Do you feel that faculty and staff care about you as a person?						
Non-Visibly disabled:	29	4.00	1.20			
Visibly disabled:	16	4.13	1.25			.3932
23. Do faculty and staff seem to judge you fairly?						
Non-Visibly disabled:	29	2.93	1.29			
Visibly disabled:	16	3.31	1.25			.4242
24. Are you assertive in seeing that your needs are known by faculty and staff?						
Non-Visibly disabled:	29	2.93	1.29			
Visibly disabled:	16	3.31	1.25			-.7411
28. Do you feel that due to your disability, faculty and staff have unfairly controlled your opportunities for success or failure in your educational endeavors?						
Non-Visibly disabled:	29	1.60	.97			
Visibly disabled:	16	1.63	.62			.1154

*Mean based on: 1 = Never; 2 = Seldom; 3 = Sometimes; 4 =

Often; 5 = Always.

**t-Test computed on the comparison of two groups, non-visibly physically disabled and visibly physically disabled.

There was no notable difference between the two groups as shown by the t value of (1.2170). It appears that non-visibly physically disabled students do feel moderately more intimidated to ask for special consideration than do visibly physically disabled students.

Question 18 of Table 14 asks, Do you feel comfortable talking with faculty or staff regarding the needs associated with your disability? Non-visibly physically disabled students indicated a mean response of 2.93 with a standard deviation of (1.44), and visibly physically disabled students indicated a mean response of 3.63 with a standard deviation of (1.41). There was no notable difference between the two groups as shown by the t value of (-1.3840). It appears, however, that non-visibly physically disabled students are not as comfortable talking about the needs associated with their disability as are visibly physically disabled students.

Question 20 of Table 14 asks, Have you felt pressured by faculty or staff to meet unrealistic expectations? Non-visibly physically disabled students indicated a mean response of 2.13 with a standard deviation of 1.28 while visibly disabled students indicated a mean response of 1.94 with standard deviation of (1.18). There was no statistically significant difference between the two groups as shown by the t value of (.9402). It appears that non-

visibly physically disabled students and visibly physically disabled students are seldom pressured to meet unrealistic expectations.

Question 21 of Table 14 asks, Are you required to validate your disability to faculty and staff in order to receive assistance? Non-visibly physically disabled students indicated a mean response of 3.80 with a standard deviation of (1.06), and visibly physically disabled students show a mean response of 3.81 with a standard deviation of (1.22). There was no statistically significant difference between the two groups as shown by the t value of (1.3190). It appears that both non-visibly physically disabled students and visibly physically disabled students are often required to validate their disability.

Question 22 of Table 14 asks, Do you feel that faculty and staff care about you as a person? Non-visibly physically disabled students indicated a mean response of 4.00 with a standard deviation of (1.20), and visibly physically disabled students indicated a mean response of 4.13 with a standard deviation of (1.25). There was no notable difference between the two groups as shown by the t value of (.3932). It appears that both non-visibly physically disabled students and visibly physically disabled students often feel they are cared about by faculty and staff.

Question 23 of Table 14 asks, Are you assertive in seeing that your needs are known by faculty and staff? Non-

visibly physically disabled students indicated a mean response of 2.93 with a standard deviation of (1.29), and visibly physically disabled students indicated a mean response of 3.31 with a standard deviation of (1.25). There was no notable difference between the two groups as shown by the t value of (-.7411). It appears that both non-visibly physically disabled students and visibly physically disabled students lack assertiveness in dealing with faculty and staff regarding their needs.

Question 28 of Table 14 asks, Do you feel that due to your disability, faculty and staff have unfairly controlled your opportunities for success or failure in your educational endeavors? Non-visibly physically disabled students indicated a mean response of 1.60 with a standard deviation of (.97), and visibly physically disabled students indicated a mean response of 1.63 with standard deviation of (.62). There was no notable difference between the two groups as shown by the t value of (.1154). It appears that both non-visibly physically disabled students and visibly physically disabled students feel that faculty and staff have had very little if any unfair control over their educational opportunities. A standard deviation of .62 indicates an extremely tight grouping around the mean score for visibly physically disabled students.

Availability of Services

The data contained in Table 15 categorize one question that deals with the availability of services for physically disabled students. The perceptions of physically disabled students were evaluated on a Likert scale as follows: 1.00 = never, 2.00 = seldom, 3.00 = sometimes, 4.00 = often, 5.00 = always. The t-Test was computed at a significance level of 0.05 on the comparison of two groups--non-visibly physically disabled and visibly physically disabled--to determine if a significant difference between the means of the two groups existed. The standard deviation aids the researcher in determining how distant individual scores are from the mean itself. We need therefore two symbols to identify the mean: one for the sample mean, and the other for the population mean (Leedy, 1981 p.107).

Question 19 of Table 15 asks, Have you been able to acquire needed services from faculty and staff without undue stress? Non-visibly physically disabled students indicated a mean response of 3.43 with a standard deviation of (1.48), and visibly physically disabled students indicated a mean response of 3.81 with a standard deviation of (1.33). There was no notable difference between the two groups as shown by the t value of (-.1090). It appears that both non-visibly physically disabled students and visibly physically disabled students have experienced minimal difficulty in acquiring needed services from faculty and staff.

Table 15. Availability of services.

Questions	N=46	N	Mean*	SD	t-Test**
19. Have you been able to acquire needed services from faculty or staff without undue stress?					
Non-Visibly disabled:		28	3.43	1.48	
Visibly disabled:		15	3.81	1.33	-.1090

*Mean based on: 1 = Never; 2 = Seldom; 3 = Sometimes; 4 = Often; 5 = Always.

**t-test computed on the comparison of two groups: non-visibly physically disabled and visibly physically disabled.

Student Comments and Insights

The final section of the survey instrument asked for student comments and insights. This portion of the survey instrument was formatted in an open fashion to allow the participants to address their concerns and provide the researcher with valuable insights. This section was answered strictly on a voluntary basis and was not completed by all participants. While not conclusive, these comments and insights do indicate that physically disabled students at Montana State University have raised additional concerns that are described in the tables and narratives that follow. The student comments and insights have been grouped into areas of commonality.

The tables and narratives discussed in the following section reflect comments and insights most commonly mentioned by the participants and have been grouped by the researcher.

Table 16. Number who wrote personal comments and insights.

Categories	N=46	N	%
Respondents		38	83

As indicated in Table 16, 38 of the 46 participants in the study took the time to write personal comments and insights. This indicates that 83% of the participants responded to this section.

Table 17. Find it difficult to ask for assistance.

Categories	N=46	N	%
Non-Visibly Disabled:		5	13
Visibly Disabled:		0	0

As shown in Table 17, 5 of the 38 participants (13% of the total), all of whom were non-visibly physically disabled, indicated that it is difficult for them to ask for assistance from faculty or staff. One student stated, "It is hard to say I need help." These feelings were expressed exclusively by non-visibly physically disabled students.

Table 18. Have difficulty with snow accumulation.

Categories	N=46	N	%
Non-Visibly Disabled:		0	0
Visibly Disabled:		3	8

As indicated in Table 18, 3 of the 38 participants for (8% of the total), all of whom were visibly physically disabled, are experiencing difficulty with mobility due to snow accumulation on campus.

As indicated in Table 19, 5 of the 38 participants (13% of the total), all of whom were non-visibly physically disabled, are experiencing difficulty with chronic pain that often limits or prevents them from participating in activities, both academic and personal. It is important to note that only non-visibly physically disabled students reported difficulty in this area.

As indicated in Table 20, 6 of the 38 participants for 16% of the total respondents, all of whom are non-visibly physically disabled, perceived difficulty acquiring needed special accommodations and services from some departments at Montana State University. Of those students who commented regarding these departments, there appeared to be strong negative emotional feelings behind their responses. Of the visibly physically disabled student who commented there is not enough data to warrant further mention in this study.

Table 19. Suffer from chronic pain.

Categories	N=46	
	N	%
Non-Visibly Disabled:	5	13
Visibly Disabled:	0	0

Table 20. Suffer difficulty acquiring services.

Categories	N=46		N	%
Non-Visibly Disabled:			6	16
Visibly Disabled:			1	3

One non-visibly physically disabled student commented that he had been verbally abused by a visibly physically disabled student for utilizing disabled student services. This appears to indicate that the visibly physically disabled student was relying on visible cues to affirm the other person's disability. Also a few non-visibly physically disabled students commented that they preceived from their interaction with faculty and staff that if their disability does not show, any variance needed will be denied them. Both groups indicated that family pressures are heavy when combined with academic demands. Visibly physically disabled students cited difficulties in accessing literature in the library, opening doors, and using elevators on campus. There was some indication by both groups of physically disabled students that the Office of Financial Aid was promoting unrealistic policies and procedures that discriminated against disabled students by expecting them to meet the same criteria as able-bodied students. There was some indication by both groups of physically disabled students that state and federal rehabilitation programs were slow to respond to their needs for physical aides that would

allow them to participate on an equal basis with able-bodied students.

As for positive comments, the staff of the Resource Center was lauded by both groups of physically disabled students as extremely helpful and supportive in assisting them with their special needs and functioning as an advocate in their interactions with various departments on campus and with state and federal rehabilitation offices. Generally, physically disabled students felt that faculty and staff were reasonable, supportive and willing to make adjustments in policies to accommodate their needs.

CHAPTER 5
CONCLUSIONS, IMPLICATIONS, RECOMMENDATIONS
AND SUMMARY

Introduction

The purpose of this chapter is to report the results of the survey research to determine whether physically disabled students who were enrolled during autumn quarter at Montana State University and who were registered with the Resource Center Office of Disabled Student Services at Montana State University and Montana Vocational Rehabilitation Services, and who have non-visible trauma-or illness-induced physical disabilities have greater difficulty performing in the academic environment and whether they experience different interactions in dealing with faculty and staff at Montana State University than do physically disabled students with visible trauma-or illness-induced injuries. The conclusions, implications, recommendations and summary are presented.

Objectives

The overall purpose of this study centered around five major objectives:

1. to determine if differences exist between the entire identified non-visibly and visibly physically disabled student

population at Montana State University as to their ability to perform in the academic environment;

2. to determine the perceptions of the entire identified Montana State University student population with non-visible trauma-or illness-induced physical disabilities as to their relationships with faculty and staff;

3. to determine the perceptions of the entire identified Montana State University student population with visible trauma-or illness-induced physical disabilities as to their relationships with faculty and staff;

4. to determine if differences exist between the two groups regarding their relationships with faculty and staff.

Hypotheses

The following hypotheses were placed upon this research to determine if any significance occurred at the .05 level using a t-Test for determining differences between group means:

H₁: There will be no significant differences between non-visibly and visibly physically disabled students in their ability to perform in the academic environment;

H₂: There will be no significant differences between non-visibly and visibly physically disabled students in their relationships to faculty and staff;

H₁: There will be no significant differences between non-visibly and visibly physically disabled students in their ability to acquire services at Montana State University.

Conclusions

Based on the analysis of the data and student comments, the following conclusions have been drawn:

1. Non-visibly physically disabled students experience notably higher levels of chronic pain associated with their disability than do visibly physically disabled students;
2. Overall, non-visibly physically disabled students do not experience greater difficulty performing in the academic environment than do visibly physically disabled students. Both groups feel a high level of control over their academic success or failure. On the basis of these findings, the null hypothesis addressing the ability to perform is accepted;
3. Non-visibly physically disabled students do feel somewhat more intimidated by faculty and staff than visibly physically disabled students when asking for special considerations associated with their disabilities. This may be due to their reluctance to identify themselves as disabled;
4. Data taken from the student comments indicate there may be a notable level of discrimination against non-visibly physically disabled students by some departments, but due to a lack of data to further analyze the population makeup, this data is inclusive;

5. Student comments also have pointed out that The Office of Financial Aid does not appear to be making policy concessions for physically disabled students who are unable to meet graduation time lines established for able bodied students;

6. Both non-visibly and visibly physically disabled students lack assertiveness in seeing that their needs are known by faculty and staff;

7. Overall, non-visibly physically disabled students do not experience notable differences in their relationships with faculty and staff than visibly physically disabled students. On the basis of these findings, the null hypothesis addressing students relationships to faculty and staff is accepted.

8. Both non-visibly and visibly physically disabled students are able to acquire needed services from faculty and staff without undue stress. On the basis of these findings, the null hypothesis addressing the student's ability to acquire needed services at Montana State University is accepted;

9. Information gained from student comments indicate that visibly physically disabled students may have prejudices and misconceptions concerning the reality of non-visibly physically disabled students' disabilities and limitations.

Implications

The following implications are offered as a result of this study:

1. Although non-visibly physically disabled students overall do not experience greater difficulty performing in the academic environment than do visibly physically disabled students, they do experience notably higher levels of chronic pain associated with their disability. Visibly physically disabled students indicated that only 13% of their group were suffering from degenerative diseases, and 87% of their group had sustained a trauma related injury. Non-visibly physically disabled students indicated that 60% of their group were suffering from degenerative diseases, and only 37% of their group had sustained a trauma related injury. Three percent did not respond to this survey question. Dr. Robert D. McKenzie, staff physician for Swingle Health Services at Montana State University, states:

Trauma-related injuries when stabilized, often cause little pain or discomfort directly associated with the resultant disability. In the case of spinal trauma, there may be a resulting loss of the ability to perceive pain due to injury to the spinal cord. Degenerative diseases on the other hand, are often progressive in nature and can be extremely painful (February 1990).

The researcher believes that this variance in the nature of the disabilities between the two groups accounts for the higher levels of pain experienced by non-visibly physically disabled students;

2. Although non-visibly and visibly physically disabled students are not experiencing notable difficulties in their overall relationships with faculty and staff, student comments suggest strong feelings that non-visibly physically disabled students are experiencing discrimination from some departments. Of the total participants who addressed issues in the comment section of the survey instrument, 16% indicated that they had experienced difficulty with acquiring needed services from various departments. Due to a lack of data to further analyze the population makeup, this data is considered inclusive by the researcher.

Recommendations for Program Improvement

As a result of this study, the following recommendations are offered for programs directed toward physically disabled students at Montana State University:

1. Counseling services and support groups should be offered to both non-visibly and visibly disabled students, that specifically address the issues surrounding chronic pain and its management;
2. Counseling services and support groups should be offered to both non-visibly and visibly disabled students that specifically address the issues surrounding assertiveness skills in dealing with interactions with faculty and staff at Montana State University, as well as federal, state and county assistance programs;

3. Periodic departmental evaluations by disabled students should be implemented to assist Montana State University in monitoring and improving disabled student and faculty/staff relations;
4. Montana State University should offer in service education for faculty and staff dealing with disabled student stereotypes and attitudes that influence faculty and staff perceptions of disabled students;
5. The Office of Financial Aid should review present policies that deal with timelines for graduation and credit load requirements as applied to disabled students.

Recommendations for Further Study

The results of the data presented in this study suggest the following recommendations for further study:

1. A survey of similar nature should be conducted to include all disabled students at Montana State University;
2. A survey of similar nature should be conducted to include disabled students listed with the Veterans Administration and those students at Montana State University not readily identified through the resources used in this study;
3. A survey of similar nature should be conducted to include physically disabled students' relationships with their spouses, children, parents, fellow siblings, peers, friends, employers;

4. A survey should be conducted to investigate the perceptions that are held by non-visibly and visibly disabled students toward each other;
5. A survey should be conducted to determine the effects of chronic pain on emotions and behaviors, such as irritability, anger, depression, or substance abuse and how those effects impact disabled students' interactions with spouses, children, parents, peers, friends, and past and/or present employers;
6. A survey should be conducted using a non-visibly physically disabled student group and an able-bodied student group that represent students from similar curriculums and grade levels, to determine if there is a notable difference in their relationships with faculty and staff at various departmental levels.

Summary

The data in this study show that non-visibly physically disabled students do experience notably higher levels of chronic pain associated with their disability, due to the high incidence of degenerative diseases among this group, as opposed to visibly physically disabled students who show a high incidence of spinal and other trauma-related disabilities. Both non-visibly and visibly physically disabled students lack assertiveness in seeing that their needs are known by faculty and staff. Although there is no notable indication of discrimination by faculty and staff at

Montana State University toward non-visibly or visibly physically disabled students, there is a strong indication that discrimination may exist at the departmental level.

The information from this study can be used to assist administrators, faculty, staff, and families of disabled students, as well as disabled people, to better understand each other and how relationships are affected by their interactions with one another at Montana State University.

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APPENDICES

APPENDIX A
PHYSICALLY DISABLED STUDENT
QUESTIONNAIRE

PHYSICALLY DISABLED STUDENT QUESTIONNAIRE

PART 1 (DEMOGRAPHICS)

Please circle the correct reply or fill in the proper blank as needed.

1. What is your sex? (male) (female)
2. What is your marital status? (married) (single)
3. Is your disability visibly apparent to others? (yes) (no)
4. What was your level of education prior to coming to MSU? ____
5. What is your present year of attendance at MSU? ____
6. Have you had post-secondary education since being disabled? (yes)
(no)
7. Please list the names of these schools. _____
8. What is your current age? _____
9. How long have you lived in Montana? _____
10. What is your national origin? _____
11. What is your specific disability? _____

SECTION II

Please circle the number that best describes your experiences.

- | | | | | | |
|----------------------|-------|-------|-------|-------|-------|
| 5 - "always"----- | ----- | ----- | ----- | ----- | ----- |
| 4 - "often"----- | ----- | ----- | ----- | ----- | ----- |
| 3 - "sometimes"----- | ----- | ----- | ----- | ----- | ----- |
| 2 - "seldom"----- | ----- | ----- | ----- | ----- | ----- |
| 1 - "never"----- | ----- | ----- | ----- | ----- | ----- |
-
12. Do you experience pain or discomfort that makes it difficult to attend classes, take tests, or participate in class discussions? 1 2 3 4 5
 13. Are you treated fairly by faculty and staff in regards to your disability? 1 2 3 4 5
 14. Has your disability made it difficult or impossible to meet course requirements? 1 2 3 4 5

15. Have faculty been supportive and open to modifying course requirements to accommodate your special needs? 1 2 3 4 5
16. Has it been difficult for you to ask for assistance from faculty or staff? 1 2 3 4 5
17. Do you feel intimidated by faculty or staff? 1 2 3 4 5
18. Do you feel comfortable talking with faculty or staff regarding the needs associated with your disability? 1 2 3 4 5
19. Have you been able to acquire needed services from faculty or staff without undue stress? 1 2 3 4 5
20. Have you felt pressured by faculty or staff to meet unrealistic expectations? 1 2 3 4 5
21. Are you required to validate your disability to faculty and staff in order to receive assistance? 1 2 3 4 5
22. Do you feel that faculty and staff care about you as a person? 1 2 3 4 5
23. Do faculty and staff seem to judge you fairly? 1 2 3 4 5
24. Are you assertive in seeing that your needs are known by faculty and staff? 1 2 3 4 5
25. Do you feel confident that you will be successful in your schooling efforts? 1 2 3 4 5
26. Do you feel comfortable in the academic environment? 1 2 3 4 5
27. Do you wish you could return to your old job and/or lifestyle? 1 2 3 4 5
28. Do you feel that others control your opportunities for success or failure in school? 1 2 3 4 5

SECTION IV

I realize that I may have neglected to touch on many areas of concern that affect us as disabled students. Please comment on specific experiences or areas where you have had difficulty or success in gaining help and/or support in your academic pursuits at MSU. Your personal comments and experiences are of tremendous value to this study. Feel free to attach additional pages if needed. Thank you for your help in this study.

COMMENTS:

APPENDIX B

FIRST MAILING COVER LETTER TO
PHYSICALLY DISABLED STUDENTS


Department of Agricultural and Technology Education

Cheever Hall
 Montana State University
 Bozeman, Montana 59717
 406-994-3201 or 994-3691

Dear Fellow Student,

October 15, 1989

As a disabled person and student at MSU, I am acutely aware of many of the pressures that we as disabled students face in dealing with academic, family, and social demands. I truly believe that we are the experts regarding our own disabilities. I hope that you will be willing to assist me in this study by answering a few questions regarding your experiences at Montana State University.

This study is strictly confidential, as I will be receiving only the questionnaires, without knowledge of who the respondents may be. The code number is for sorting, data tabulation, and data analysis. It will take about 15 minutes to fill out, so make yourself a cup of hot cocoa on me and enjoy, while you leisurely answer a few questions. When you are finished, please just tape or staple the questionnaire closed so that the return pre-addressed and stamped side shows, and drop it in the mail.

Part 1 asks for demographic data which will be used for the analysis of data.

Part 2 asks questions about your interactions with faculty and staff. Please circle the number that best describes your experiences.

Part 3 asks questions about your interactions with your spouse, children, friends, parents, neighbors, and former or present employer. Please circle the number that best describes your experiences.

Part 4 asks for your personal comments and experiences, as these are of tremendous value to this study. Please, if you can, take a few minutes to also write on the comment pages at the end of the questionnaire. Please return the questionnaire by November 30.

I would like to thank you in advance for assisting me with my research project.

Sincerely yours,

Ronald L. Currie
 Graduate Student
 Telephone (406) 994 3201

APPENDIX C

SECOND MAILING COVER LETTER TO
PHYSICALLY DISABLED STUDENTS

**Department of Agricultural and Technology Education**

Cheever Hall
Montana State University
Bozeman, Montana 59717
406-994-3201 or 994-3691

Dear Fellow Student,

October 14, 1989

All of us are far busier with all of the demands placed upon us than we should be, and most of us have a hard time just keeping up with the obligations which are necessary and essential. We know how the little extras sometimes receive our best intentions, but in reality none of us have the time that we desire to fulfill those intentions.

From the questionnaires, New Perceptions in Post-Secondary Education, that I hope you received about two weeks ago, I have only a few replies. Perhaps they were mislaid by during mid-term exams or lost under the cereal boxes on the table.

In any event, here is another questionnaire and a package of cocoa. Could you please take a few minutes and fill it out before your cocoa gets cold!

Thanks again for your help.

Sincerely yours,

Ronald L. Currie
Graduate student
Telephone (406) 994 3201

APPENDIX D

LETTER OF REQUEST TO MONTANA STATE
VOCATIONAL REHABILITATION SERVICES

**Department of Agricultural and Technology Education**

Cheever Hall
Montana State University
Bozeman, Montana 59717
406-994-3201 or 994-3691

To Whom it May Concern,

I am a graduate student at Montana State University, working on a Master of science in Technology Education. As a disabled person and former client of the Montana Vocational Rehabilitation program, I am acutely aware of many of the academic, family, and social pressures that disabled persons deal with in trying to re-establish their lives and retrain their minds and bodies.

I am writing a research paper dealing with problems encountered by disabled students at Montana State University. I will be surveying disabled students' perceptions of their interactions with faculty, staff, as well as their interactions with their families, friends, neighbors, parents, and employers. I have put together a partial list of tentative questions that are to be used in the survey. I would greatly appreciate your comments and suggestions in further formulating these questions.

I am also seeking permission and assistance in the mailing of this questionnaire to those Vocational Rehabilitation clients who meet the following criteria:

1. They must have a trauma- or illness-induced physical disability that has occurred sometime after birth;
2. They must be enrolled at Montana State University during fall quarter 1989.

I would be providing the questionnaire, envelopes, and stamps, but would need help with the actual mailing. I do not require access to names or addresses of the clients. All I am interested in is the results of the returned questionnaire. I anticipate that the questionnaire will be ready to mail around October 15 of this year. I will be providing copies of the survey results to your office, tentatively in February 1990. I have enclosed a copy of my proposal for your review and comments. Thank you very much for your time and consideration.

Sincerely,

Ronald L. Currie
Montana State University
Department of Technology Education
Bozeman, Montana 59715