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## DO PEOPLE WITH DISABILITIES FEEL EXCLUDED? COMPARISON OF LEARNING AND PHYSICAL DISABILITIES

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***Abstract.** Little prior research has examined attitudinal differences between those with learning and physical disabilities, but an enhanced understanding can be critical to institutions in order to better work with people across a range of disability types. There are expected to be specific differences in disability attitudes between people with physical and learning disabilities. People with physical disabilities are hypothesized to report greater feelings of exclusion, pride, and social activism, whereas people with learning disabilities will have a greater tendency to value treatment assistance from doctors. Hypotheses were generally supported. Attitudes of people with physical disabilities are often different from those of people with learning disabilities, a distinction that requires understanding, acknowledgment, sensitivity and appropriate interaction.*

***Keywords:** learning disability; physical disability; attitudes; orientation; social; exclusion*

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### 1. Introduction

According to the Americans with Disabilities Act (ADA) (U.S. Department of Justice, 1991), a disability is defined as “a physical or mental impairment that substantially limits one or more of the major life activities...” The U.S. Census Bureau (2003) describes and tracks certain types of disabilities, some more physical and some more learning-oriented. For example “a condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting, or carrying” would be classified as a physical disability. Sensory disabilities, such as “blindness, deafness, or a severe vision or hearing impairment,” might also be considered more physical in nature. However, difficulty “learning, remembering, or concentrating” would more accurately describe a learning disability. According to U.S. Census data for the year 2000 (U.S. Census Bureau, 2003), there are 30.5 million people with physical, sight or hearing

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disabilities, and 12.4 million with disabilities relating to learning, remembering, or concentrating.

Learning disabilities are disorders that affect the ability to understand or use spoken or written language, do mathematical calculations, coordinate movements, or direct attention (National Institutes of Health, 2011). Learning disabilities occur in very young children, but are not usually recognized until school age. About 8 to 10 percent of American children under 18 years old have some type of learning disability (National Institutes of Health, 2011). Thus, learning disabilities are prevalent but are more difficult to recognize and define in comparison to physical disabilities.

There can be tension between two alternatives for people with learning disabilities: 1) “passing” as non-disabled, thus avoiding immediate potential stigmatization, but risking unintended exposure; and 2) proactive disclosure, acknowledging potential stigmatization and getting assistance for the disability. Of course, there are many alternatives in between, in which disclosure can be made selectively to certain individuals but not others. It has been suggested that learning disabilities can be more stressful and psychologically damaging than physical disabilities, because of ambivalence regarding disclosure (Patterson and Blum, 1996). This leads to interesting questions regarding the emotional and cognitive processing dynamics of people with learning disabilities, in contrast to those with physical disabilities.

The purpose of the current research is to specifically compare, for people with learning versus physical disabilities, specific attitudes toward their disability. Those with physical disabilities are more likely to define themselves as disabled, because their disabilities are more obvious and affect many aspects of their lives. Those with learning disabilities, on the other hand, may feel “normal” in many life situations which do not involve cognitive prowess (family life, sports, social events, etc.), potentially providing more incentive to “pass” as non-disabled. Unique attitudes of those with learning vs. physical disabilities are expected to be revealed in measures relating to the feelings pride, exclusion, social responsibility, and medical cures. No prior research has utilized such measures to evaluate and understand the differences between those with learning and physical disabilities. The results should be valuable to many fields, such as education, psychology, and business, all of which can benefit from an enhanced understanding of the attitudes of people with different types of disabilities.

## 2. Literature Review

### *2.1. Previous Research on Physical Disabilities*

Orientations toward disability have typically been theorized and tested in reference to people with physical disabilities. Such theories were initially based on a medical model (e.g., Boorse, 1977), in which people with disabilities were categorized according to acceptance of, or adaptation to, their limitations. Under the medical model, disability is seen as a personal tragedy that must be accepted and treated like an illness, to be “fixed” or hidden. Disability research initially supported orientations centered on achieving normalization (e.g., Darling, 1979), which ties closely with the medical model

and involves acceptance of larger societal norms and the welcoming of “adaptive” rehabilitation efforts.

Research in the past two decades has revealed new segments of people with disabilities, attributed to the activism of the Disability Rights Movement. Reactions against stigma-based identity has given rise to social-political and disability pride perspectives (e.g., Linton, 1998). The social model shifts the theoretical focus from the individual to larger society (e.g., Oliver, 1990) and has been linked to activism. The social model perspective arose as a reaction to the medical model (e.g., Humphrey, 2000) and sees disability as a type of social construct or, more emphatically, as a “sophisticated form of social oppression” (e.g., Oliver, 1990). The social model asserts that it is society rather than people with disabilities that must be changed; that disabilities are caused by physical and social barriers to participation as well as by unfair stigmatization.

The social model has been criticized for lacking a real identity (Humphrey, 2000; Paar and Butler, 1999; Swain and French, 2000) and creating antimony between those with and without disabilities (Humphrey, 2000). Furthermore, the rejection of a tragic view is not centrally addressed by the social model, which tends to view disability as a disadvantage. Disability pride ties closely with an affirmative, non-tragic view of disability that encompasses positive social identities (Swain and French, 2000). People with disabilities who adopt this pride-based view are characterized by a positive view toward their identity, their disability, and its effect on their lives. Individuals high in pride are expected to be more affirming of their disability, seeing it as part of a positive social identity and as a normal form of diversity.

## ***2.2. A More Comprehensive Model of Disability Orientation and Attitudes***

Recently, disability orientation models have emerged that include elements of previous models as well as newer dimensions. In order to address the diverse segments of people with disabilities, a model that reflects an entire range of disability orientations is important. A new typology of orientations toward disability has been proposed (Darling, 2003) and tested (Darling and Heckert, 2010a). Broader than the concept of disability identity (e.g., Gill, 1997), the typology of orientations includes clusters relating to normalization, social, and affirmation models. Furthermore, the typology (Darling and Heckert, 2010a) also recognizes the importance of differential access to (and conversely, exclusion from) opportunities. Darling (2003) suggested that orientations toward disability should reflect differential access to opportunities to achieve normalization or affirmation, marked by feelings of inclusion or exclusion.

Feelings of exclusion are distinct from either normalization or affirmation. Normalization or “cultural majority” opportunity includes access to the wider population based on appearance or ability, whereas affirmation or “minority” opportunity involves access to alternative norms based on a value of diversity. Thus, some individuals may have access to opportunities in mainstream society but may choose to reject them. Conversely, individuals who do not have opportunities for inclusion in mainstream society may identify with the majority nonetheless, or could choose minority identification. Exclusion,

on the other hand, is conceptualized as a distinct attitude, because it specifically relates to dissatisfaction with being excluded.

Using a new disability orientations scale, four disability factors emerged from recent research (factor analyzed with a sample of 388 individuals with disabilities; Darling and Heckert, 2010a) that map quite well with prior disability theory: 1) Pride – showing pride in one’s identity as a person with disabilities; 2) Social model – believing society should do more; 3) Medical model – believing one’s disabilities should be viewed as needing treatment, and 4) Exclusion - perceived ability to participate and have access to “normal” activities.

These disability factors, which can be interpreted as “beliefs and attitudes” about one’s disability, will be utilized in the current research. The disability factors can clarify how attitudes about one’s disability might differ between those with physical and learning disabilities. By better understanding such attitudes, each type of disability can be better understood and addressed in society.

### ***2.3. Research on Learning Disabilities***

Learning disabilities is a generic term referring to disorders that hinder the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities. These disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction (National Joint Committee on Learning Disabilities, 1990). One of the characteristics of individuals with learning disabilities is inconsistency of performance, which becomes more apparent in academic settings. The inconsistency increases with demands placed on skills, often leading to an array of coping mechanisms to hide or overcome the disability (Hartman and Krulwich, 1984). People with learning disabilities tend to look like everyone else. Some people with learning disabilities consider this perceived normalcy to be an advantage and appreciate the ability to “blend in with the crowd” or “pass” as non-disabled, so that their disabilities are hidden.

Self-perceptions of scholastic competence, behavioral conduct, and global self-worth are generally lower among children with learning disabilities (Bear, Clever, and Proctor, 1991). Students with learning disabilities are typically less well-liked, more frequently rejected, have lower academic self-concept scores (Vaughn and Elbaum, 1996), score lower in self-perceived intelligence, academic skills, behavior, and social acceptance (Smith and Nagle, 1995), and tend to be more vulnerable to bullying (Mishna, 2003) than other students. This environmental stigma, more intangible and unpredictable than for people with physical disabilities, magnifies the importance of socialization and social comparison for people with a learning disability (Dagnan and Waring, 2004). People with learning difficulties may prefer not to identify with others with disabilities, because of perceived negative effects on self-esteem (Harris, 1995) and a desire for normalization. Although some individuals with learning disabilities might cope by regarding themselves as part of a minority group which rejects prejudice, others might distance themselves from those disabilities and from potentially stigmatizing services (Jahoda and Markova, 2004). Some students may go to great lengths to avoid difficult tasks while trying to appear competent and pass as “normal” (Rueda and Mehan, 1986).

Some researchers argue (e.g., Chappell, Goodly, and Lawthom, 2001) that learning disability researchers have failed to effectively utilize newer models, which tend to

incorporate a more positive view of disability. In order to better understand the attitudes of people with learning difficulties, in comparison with those of people with physical disabilities, the new, more comprehensive typology of orientations toward disability (Darling and Heckert, 2010a) will be used.

#### ***2.4. Attribution Theory and Disability Orientation***

There is a need for greater clarity regarding attitudes of people with learning disabilities compared to people with physical disabilities. Attribution theory seeks to describe the process by which individuals explain causes of events. Heider (1958) distinguished between two types of explanation - internal attributions assigned to oneself (e.g., ability, mood, effort, etc.) and external attributions involving external factors (e.g., task, other people, luck, etc.). Different patterns of attribution can cause variation in attitudes across individuals.

Researchers interested in cognitive processes have focused primarily on the antecedents-attributions link, whereas those interested in the dynamics of behavior have focused on the attributions-consequences link (Kelley and Michela, 1980). This study will primarily address the cognitive processes link between the antecedent (type of disability - learning or physical) and attributions reflected in various beliefs and attitudes toward disability (pride, social, medical, exclusion). Of the three types of antecedents to attribution in the theory of correspondent inference (Jones and Davis, 1965) - situational information, perceiver's beliefs, and motivation to infer - this study focuses on perceiver's beliefs, as measured by the disability factors.

Thus, the disability factors used in this study (pride, social, medical, exclusion) are conceptualized as beliefs and attitudes relating to feelings of personal esteem, interactions with society, etc. Variation in the factors by disability type (physical or learning) is expected because each type of disability is associated with unique experiences and attributions, which are predicted to be reflected by differing attitudes toward one's disability. Theoretical conceptualization as well as hypotheses and support are discussed below.

### **3. Conceptualization and Hypotheses**

The theoretical model is based on the idea that people with physical disabilities, which are more likely to be visible than learning disabilities, view their disability fundamentally differently than people with learning disabilities. Much of this difference derives from the tension between "passing" and potential stigmatization if exposed. Thus, the type of disability itself is expected to differentially affect attitudes toward one's disability. For example, people trying to "pass" might especially value medical remedies that allow greater normalization and reduced risk of exposure, ultimately wishing that they could "hide" their disability. People with physical disabilities, however, might have already accepted their disability, which is more likely to be obvious to the outside world, and would more likely have adopted a positive disability identity of which they are proud (especially those who acquired their disability at birth; Darling and Heckert, 2010b). People with learning disabilities might feel less need for social activism and tend to hide their disability to achieve normalization, often quite successfully, by magnifying the importance of the social world and working hard at passing. Similarly, people with learning disabilities likely feel less excluded, due to their efforts at passing, inclusion and normalization.

Specific hypotheses and support regarding potential relationships between disability type and disability attitude factors are provided in the following sections.

### ***3.1. Disability Pride***

People with disability pride have an affirming attitude, accepting their disability identity and viewing it as a form of diversity rather than as a disadvantage. People with physical disabilities have been motivated to come to terms with their disability, since they cannot escape the visibility of their disability identity. One of the ways to adapt to a disability is through affirmation and pride. Those with learning disabilities, who tend toward passing and normalization efforts, might be in greater denial or and may not have accepted the disability as part of their identity. Thus, people with physical disabilities are expected to have the greater levels of disability pride than will people with learning disabilities.

**H1a:** People with physical disabilities will report higher levels of disability pride than will people with learning disabilities.

Those who have been born with a physical disability generally have greater pride in their disability than those who acquired their disability later in life (Darling and Heckert, 2010b), who might deal with regret regarding prior normalization and health. People who acquire physical disabilities at birth tend to more readily accept their disability, take pride in it, and adopt a more positive disability identity (Darling and Heckert, 2010b). Thus, it is expected that people with physical disabilities from birth will have greater disability pride than those with physical disabilities acquired later in life.

**H1b:** People with physical disabilities acquired at birth will have higher levels of disability pride than will those who acquired physical disabilities after birth.

If a physical disability is acquired at birth, it is typically more immediately obvious to the outside world than a learning disability. Identification and acceptance of learning disabilities tends to be more complex, balancing potential denial, invisibility, and adaptation (Livneh, Martz, and Wilson, 2001). Some learning disabilities are never accurately identified. However, if a person with an identified learning disability accepts that the disability was acquired at birth, the psychological mindset might be comparable to one in which a physical disability was acquired at birth. In other words, agreement with the notion that a learning disability was acquired at birth should logically be associated with greater acceptance, pride, and disability identity than if the learning disability was perceived to have been acquired or recognized later in life. Thus, it is expected that people who indicate that their learning disability was acquired at birth will have greater disability pride than those who state that their learning disability was acquired later in life (when asked “how long have you had your disability?”).

**H1c:** People who indicate that they have had a learning disability since birth will have higher levels of disability pride than will those who state that they acquired their learning disability after birth.

Pride is the only disability factor hypothesized to be related to the time that a disability was acquired, based on prior research (Darling and Heckert, 2010b). However, the other disability factors will also be tested for their potential relationship with time of disability acquisition, although no significant relationships are hypothesized.

### ***3.2. Social Model***

People with learning disabilities typically want to avoid the social stigma of disability and tend to actively hide their disability to become part of larger society. Social acclimation and accepting larger societal norms can be very important. One would not expect people with learning disabilities to be as likely to adhere to a social model, since many might try to pass and conceal that identity as much as possible. On the other hand, those with physical disabilities are more likely to be socially stigmatized due to their disability, resulting in a greater adherence to a social model. In other words, those with physical disabilities are more likely to believe that society should be doing more to accommodate and include them in society.

**H2:** People with physical disabilities will report greater levels of adherence to the social model than will people with learning disabilities.

### ***3.3. Exclusion***

Prior research (e.g., Darling and Heckert, 2010a) recognizes the importance to people with disabilities of feeling excluded from activities. Although exclusion can be related to social activism, it is a relatively independent factor which may or may not be related to the other disability factors, depending on the individual. For example, the exclusion factor itself likely varies by individual characteristics such as the physical or learning disability. Those with a physical disability, either as a result of poor accessibility to activities or from being excluded due to social stigma, are more likely to feel excluded. However, those with learning disabilities, whose efforts to “pass” and hide their disability might often be effective, would likely feel less excluded.

**H3:** People with physical disabilities will report greater feelings of exclusion, as measured by the exclusion disability factor, than will people with learning disabilities.

### ***3.4. Medical Model***

Under the medical model, disability is typically treated like an illness, to be “fixed” or hidden, with an ultimate goal of achieving normalization. Some people who value normalization, especially younger, more socially active individuals, might not view themselves as severely disabled. For example, some people with learning disabilities might view Ritalin as a way to “fix” their disability and achieve greater normalization. Individuals with learning disabilities might see medical remedies as more effective and would more likely adopt an attitude based on the medical factor, compared to a person with the physical disability, for whom a “cure” might be much more elusive.

**H4:** People with learning disabilities will report attitudes more highly based on the medical model than will people with physical disabilities.

## **4. Methodology**

### ***4.1. Data collection and sample***

An online survey was conducted among students with disabilities at a large U.S. midwestern university. A prior focus group of students with disabilities indicated that

an online survey was a highly accessible form of data collection (i.e., people with mobility disabilities readily use the Internet; individuals with vision disabilities use screen readers such as JAWS (Job Access with Speech), etc.). The focus group also indicated that, as an incentive, students would prefer a modest “spending money” incentive for all survey participants. Thus, all participants were compensated \$10 for survey completion and were also eligible for a drawing for a \$2,000 scholarship. All students registered with the Office of Disability Services were included, comprising both students with physical disabilities (e.g., mobility, blind, etc.) and those with learning disabilities. Of the 431 students with disabilities e-mailed surveys, completed questionnaires were obtained from 119, for a response rate of 28 percent. A demographic summary of respondents is shown in Table 1. Analyses of data provided by the Office of Disability Services indicated that the disabilities of respondents (52% with learning disabilities, 34% with mobility disabilities, 9% blind, 6% deaf) were representative of the population of students with disabilities at the university (50% with learning disabilities, 35% with mobility disabilities, 11% blind, 4% deaf).

**Table 1.** Online Survey - Demographic Characteristics of Respondents

Factors		%*
<b>Type of Disability</b>	Blind	9%
	Deaf	6%
	Mobility (walking, reaching, carrying)	34%
	Learning, remembering or concentrating	52%
<b>Time with Disability</b>	Birth	41%
	> 10 years	28%
	5-10 years	15%
<b>Gender</b>	< 5 years	8%
	Female	55%
<b>Age</b>	Male	45%
	18-22	54%
	23-25	18%
	26-29	5%
	30-39	12%
	40-49	6%
	50-59	3%
60-69	2%	
<b>Family Household Income</b>	Less than \$25,000	35%
	\$25,000 to \$49,999	23%
	\$50,000 to \$99,999	23%
	\$100,000 or more	9%
<b>Ethnicity</b>	European American (white)	79%
	African American	14%
	Latino or Hispanic	2%
	Asian American	3%
	Native American or Indian	3%

N = 119

\*For some categories (e.g., disability type, time with disability), respondents were allowed to check multiple boxes (or to not check a box). Therefore, percents may not add to 100%.



#### 4.2. Measure Development and Assessment

Disability factor items were measured using a 7-point Likert scale (1 = strongly agree and 7 = strongly disagree). An exploratory factor analysis (principle components with direct oblimin rotation) of the original disability orientation items (Darling and Heckert, 2010a) yielded the same four unique factors after purification (items with cross-loadings of greater than .4 were deleted and items with loadings of greater than .5 were retained): 1) Pride, 2) Exclusion, 3) Social, and 4) Medical. Reliability for three of the four factors was good (Cronbach's alpha greater than .70) and reliability of the medical model factor was acceptable (.60), in line with prior research (Darling and Heckert, 2010a). The disability factors, 14 retained items and factor loadings are provided in Table 2.

**Table 2.** Disability Factors – Retained Items, Reliability, Means and Standard Deviations

Factors/Items (from Darling and Heckert, 2010)	Item Load	$\alpha$	Mean	SD
<b>Pride</b>		.78	3.22	1.4
I am proud of my disability	.83			
I am a better person because of my disability	.77			
My disability is an important part of who I am	.72			
My disability enriches my life	.71			
<b>Exclusion</b>		.75	4.41	1.9
My disability limits my social life	.89			
I often am excluded from activities because of my disability	.85			
<b>Social</b>		.75	2.75	1.1
People with disabilities need to fight for their rights more than other people	.81			
The biggest problem of people with disabilities is other people's attitudes	.75			
Lack of accessibility and discrimination are why people with disabilities are unemployed	.74			
<b>Personal/Medical</b>		.60	3.29	1.4
If I had a choice, I would prefer not to have a disability	.75			
Doctors know what is best for people with disabilities	.73			
I try to hide my disability whenever I can	.73			

Confirmatory factor analysis of the disability measurement model indicated an acceptable fit ( $\chi^2 = 91.6$  (67 df), IFI = .94, CFI = .93, RMSEA = .06,  $\chi^2/df = 1.4$ ). Discriminant validity was supported by the distinct factor loadings in exploratory analysis and the relatively low correlations between factors (all lower than .40).

In order to categorize each participant by disability type, a survey question asked "What kind of disability do you have?" Participants were able to check any applicable disabilities from a list of definitions from the U.S. Census Bureau (2003), such as "Blindness, deafness, or a severe vision or hearing impairment"; "Difficulty walking, climbing stairs, reaching, lifting, or carrying"; "Learning, remembering, or concentrating", etc. For this study, learning disabilities were classified as those involving learning, remembering and concentrating. Physical disabilities were classified as physical-related disabilities such as mobility, blindness, deafness, etc. In this sample, the overwhelming majority of physical

disabilities were visible, such as blindness and mobility. The time at which the disability was acquired (since birth or later in life) was measured using the question “How long have you had your disability?”

## 5. Results

Items for each disability attitude factor were summed, with means used for easier interpretation. A summary of means and standard deviations for the disability factors is shown in Table 2. Disability types were classified into four categories, according to survey responses: physical only, learning only, both, or neither. Four separate OLS multiple regression analyses were then conducted, with each of the four disability factors (pride, exclusion, social model, and medical model) used as dependent variables. Each of the disability types (dummy variables for physical, both and neither, with learning disability as the comparison category) and disability at birth (dummy variable) were used as independent variables. For this college student sample, demographic variables did not substantially affect the analysis and were excluded for parsimony purposes. Because of missing data for some variables, there were 110 usable questionnaires. Results are shown in Table 3. Any unexpected significant results are also reported for potential future research guidance.

**Table 3.** OLS Regressions for the Four Disability Factors (n = 110)

Independent Variables	Pride		Exclusion		Social		Medical	
	<i>b</i>	Beta	<i>b</i>	Beta	<i>b</i>	Beta	<i>b</i>	Beta
Physical disability (binary)	.03	.01	-1.1**	-.28	-.42	-.18	.70*	.25
Both cognitive & physical disability (binary)	-.28	-.06	-1.8**	-.28	-.43	-.11	.45	.10
Neither type of disability (binary)	.42	.04	-.1	-.01	1.7*	.19	1.6	.16
Disability since birth (binary)	-.84**	-.31	.38	.10	-.22	-.10	.10	.04
R-Squared	.11*		.11*		.10*		.08	

\* $p < .05$ ; \*\* $p < .01$

*b* refers to unstandardized regression coefficient; Beta refers to standardized regression coefficient

Lower scores on the disability factors represent higher levels of disability pride, feelings of exclusion, agreement with the social model, and agreement with the medical model.

The regression of the social factor on physical (vs. learning) disability was marginally significant ( $p < .10$ )

The total regression (r-squared) for the medical factor was marginally significant ( $p < .10$ )

Having a physical disability was not a significant direct predictor of disability pride, failing to support H1a. Thus, type of disability was not associated with pride. However, having a disability at birth had a significant positive relationship with pride ( $t(1, 109) = 3.19$ ,  $b = .31$ ,  $p < .01$ ), consistent with prior research (Darling and Heckert, 2010a). A two-way ANOVA was used to test the moderating effect of disability at birth on the relationship between physical disability and pride. The interaction between physical

disability (binary) and disability at birth (binary) on pride was significant ( $F(1, 109) = 5.83, p < .05$ ). As expected, those with physical disabilities acquired at birth had higher levels of disability pride ( $M = 2.4$ ) than did those with physical disabilities acquired later in life ( $M = 4.0$ ), supporting H1b. When the interaction between learning disability (binary) and disability at birth (binary) on pride was tested using a two-way ANOVA, the interaction was only marginally significant ( $F(1, 109) = 3.29, p = .07$ ). Those who indicated that their learning disability was acquired at birth showed higher levels of disability pride ( $M = 3.0$ ) than did those stating that their learning disability was acquired later in life ( $M = 3.4$ ), partially supporting H1c.

People with physical disabilities reported greater feelings of social activism (marginally,  $p = .06$ ) than did people with learning disabilities ( $t(1, 109) = 1.88, b = .31$ ), partially supporting H2. Interestingly, participants who reported no disability (although registered with the office of disability services) had significantly lower feelings of social activism than did participants reporting a learning disability ( $p < .05$ ).

As expected, having a physical disability was a significant predictor of feelings of exclusion. Those with physical disabilities reported greater feelings of exclusion than did those with learning disabilities ( $t(1, 110) = 2.92, b = .28, p < .01$ ), supporting H3. Interestingly, those with both physical and learning disabilities also reported significantly greater exclusion than those with learning disabilities only ( $p < .01$ ).

Participants with learning disabilities reported greater feelings associated with the medical model than did those with physical disabilities, as predicted ( $t(1, 110) = 2.57, b = .25, p < .05$ ), supporting H4. Overall, the results are generally supportive of the study's hypotheses. Physical and learning disabilities appear to be associated quite differently with particular disability attitude factors.

## 6. Discussion of Results and Conclusion

### 6.1. Discussion

The results of this study suggest that there are specific differences in disability attitudes between people with physical and learning disabilities. For people with physical disabilities, there is greater evidence of personal adaptation through feelings of exclusion or social activism (see results for H2 and H3). The disability attitude most significantly associated with people with learning disabilities was the medical model (see results for H4), which includes items related to "passing," such as trying to hide the disability and getting assistance from doctors. These differences by disability likely derive from the tension between "passing" (to avoid potential stigmatization) and disclosure (to reduce tension and get help for the disability) for those with learning disabilities, with greater straddling between normalization and disability identity. People with physical disabilities do not have this same particular type of tension, since their disability is typically more obvious and they must deal more directly with issues related to disability.

Thus, people with physical disabilities tend to feel exclusion more strongly than those with learning disabilities. This feeling of exclusion should be understood and acknowledged in order to foster quality interaction. On the other hand, attitudes of

people with learning disabilities tend to align more closely with the medical model (wanting to hide or fix the disability if possible), which might call for a very different type of communication. The main point is that attitudes of people with physical disabilities are often unique from those of people with learning disabilities, a distinction that requires understanding, acknowledgment, sensitivity and appropriate interaction.

Results of this study have implications for many fields. For example, psychologists and sociologists can better understand the unique challenges faced by people with either learning or physical disabilities, and be able to recommend better personal development programs or infrastructure for societal adaptation. Educators could utilize the results to better understand the unique attitudes and perspectives of people from a range of disability types, and adjust their teaching styles accordingly. In the business field, “relationship marketing” is an important domain, tasked with creating long-term relationships by better understanding individual needs. For example, retailers could better understand the attitudes and needs of people with different types of disabilities, so that shopping tasks could be more accessible and customer service more satisfying.

### ***6.2. Future Research***

A potential limitation of this study is the use of a student sample, since the online survey was conducted using college students. Although some feel that significant results from a more homogeneous sample lend greater credence to external validity (Calder, Phillips, and Tybout, 1982), others see greater benefit from broader samples. College students with physical disabilities are obviously quite capable of navigating around a university campus (accommodations have been made to improve accessibility on campus). Furthermore, one would expect greater representation of people with “treatable” learning disabilities on a college campus than in an institutional setting. Further research should be done in other settings, to get a better understanding of the potential heterogeneity of attitudes of people with disabilities.

Future research could incorporate the disability attitude factors into other fields (e.g., education, sociology, marketing). For example, educational scales that measure academic self-image and social acceptance could be combined with disability factors to understand potential effects of attitude toward one’s disability on academic self-concept and socialization. The disability factors could also be combined with scales for disorders like anxiety and depression to better understand ways to adapt to a disability. Furthermore, service quality scales in marketing could be extended to include disability-specific service items, with disability factors used to evaluate unique ways in which people with different disabilities view service quality. Interestingly, prior research (Goodrich and Ramsey, 2012) suggests strong cohesion between those with physical and learning disabilities regarding the importance of accessibility and other service-related features in a retail environment.

### ***6.3. Conclusion***

This study adds to the limited academic literature regarding the comparison between people with learning and physical disabilities. The results offer a unique perspective for

evaluating attitudes of people with different types of disabilities by applying new but previously-tested scales for measuring disability attitudes (Darling and Heckert 2010a, 2010b). No prior research has utilized such disability orientation measures to better interpret the differences between those with learning and physical disabilities. The academic community can benefit from more precise and explanatory theory for understanding people with different types of disabilities. The practitioner community can gain from improved outcomes in many fields such as education, psychology, and business, all of which can benefit from an enhanced understanding of the attitudes of people with diverse disabilities.

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