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ABSTRACT

Three studies were conducted to examine variables that facilitate or hamper interaction between disabled and able-bodied college students. In study 1, 100 able-bodied Ss completed two adjective checklists identifying socially desirable and undesirable characteristics; a second group of 94 abled-bodied Ss were tested using another set of traits. Disabled students were characterized as aloof, introverted, lazy, submissive, ingenuous, and unassuming. Questionnaires completed by 24 disabled and 45 able-bodied students in study 2 revealed that disabled students tended to be older than the average college student and that they had many more able-bodied than disabled friends. Disabled and able-bodied students agreed on appropriate behaviors. The third study examined a measure of self-efficacy in interacting socially with physically disabled students. The measure was found to have internal consistency but only discriminant and concurrent validity for females. (CL)

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Social Interaction Between Physically Disabled and
Non-Disabled College Students*

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ABSTRACT

College students who have no physical disability often avoid contact with physically disabled students due to negative attitudes, lack of social skills, and social anxiety. As many architectural barriers are being removed from institutions of higher education, contact between disabled and non-disabled students is expected to increase.

In order to improve the quality of social interaction, a better understanding of attitudes is needed and the components of effective interpersonal behavior of both physically disabled and able-bodied students need to be identified. This series of studies is a preliminary examination of variables which facilitate or hamper interaction between disabled (wheelchair users) and able-bodied students in college and university settings. The behavior and attitudes of disabled and able-bodied students were assessed to 1) understand stereotyping, 2) determine the components of effective interpersonal behavior between disabled and able-bodied students and 3) develop a measure of self-efficacy in relating to disabled students.

In Study 1, 194 able-bodied students were tested to determine stereotypes of physically disabled students. Subjects indicated traits which characterize either male or female college students who are either confined to a wheelchair or have no physical disability.

In Study 2, the components of effective interpersonal behavior between physically disabled and able-bodied students were investigated. Disabled and able-bodied college students were interviewed in order to generate a list of common social situations and interpersonal behaviors in academic settings. Based on this list, an objective questionnaire was designed. Behaviors of physically disabled and able-bodied students were included. This questionnaire was completed by 24 disabled and 45 able-bodied (31 of whom had had significant contact with disabled people and 14 of whom had not) college students in order to determine which social situations occur frequently, and which behaviors of disabled and able-bodied students are appropriate or inappropriate.

The objective of Study 3 was to develop a measure of self-efficacy in interacting with physically disabled college students. 136 able-bodied students completed, in addition to some other measures, a 49 item self-efficacy questionnaire in 1 of 4 experimental conditions: interaction with a male or female college student who is either confined to a wheelchair or has no physical disability. Preliminary psychometric information on this measure is presented.

The implications of the results for the design of valid social skills training programs to facilitate interaction between physically disabled and able-bodied students are discussed.



Stereotyping—Trait Attribution

Goals

The purpose of this study was to find out about stereotyping of physically disabled (wheelchair user) college students.

Method

100 able-bodied college students were administered 2 adjective checklists. One checklist consisted of 85 socially desirable traits, the other of 85 socially undesirable ones. Subjects completed the checklists in one of 4 experimental conditions: stimulus person physically disabled (wheelchair user) male, disabled female, able-bodied male and able-bodied female college student. A second group of 94 able-bodied students was tested under the same conditions; however, a second set of traits were used. Thus, data are available on 170 socially desirable and 170 undesirable traits. Traits from Anderson's (1968), Wiggins' (1979) and Conte and Plutchik's (1981) lists were used.

Results

Question 1: When able-bodied students make trait attributions about disabled and able-bodied male and female college students, which is the more salient grouping variable, gender or disability?

Table 1

Stimulus Person	Number of Socially Desirable Traits in Common		Number of Socially Undesirable Traits in Common	
	Disabled Female	Able-bodied Male	Disabled Female	Able-bodied Male
Disabled Male				
Observed Freq.	16	7	17	3
Expected Freq.	(9.98)	(13.02)	(11.61)	(8.39)
Able-bodied Female				
Observed Freq.	20	40	1	10
Expected Freq.	(26.02)	(33.98)	(6.39)	(4.61)

$\chi^2 = 8.89, df = 1, p < .01$

$\chi^2 = 16.79, df = 1, p < .001$

Answer 1: For both socially desirable and undesirable traits, disability is more important than gender.

Question 2: How do able-bodied college students perceive disabled male and female college students, compared to able-bodied students?

Table 2

To:	Mean Number of Socially Desirable Traits Attributed		Mean Number of Socially Undesirable Traits Attributed	
	Disabled	Able-bodied	Disabled	Able-bodied
Males	22.99	31.78	27.42	23.70
Females	27.20	33.13	20.99	20.39

Males < Females, $p < .001$
 Disabled < Able-bodied, $p < .001$
 Interaction, $p < .05$
 Dis. Males < Dis. Females < Able.
 Males = Able. Females, $p < .01$

Males > Females, $p < .001$
 Interaction, $p < .05$
 Dis. Males > Able. Males >
 Dis. Females = Able.
 Females, $p < .05$

Answer 2: Disabled students are seen less positively than able-bodied students. Disabled male students are seen both more negatively and less positively than any other group.

Question 4: What specific traits are commonly attributed to disabled, but not to able-bodied students? What traits are commonly attributed to able-bodied, but not to disabled students? What traits do both groups have in common?

Table 5

Traits Attributed by Able-bodied Students

=====

To Male & Female Disabled Students (But Not to Able-bodied)¹ To Both Disabled and Able-bodied Male & Female Students² To Male & Female Able-bodied Students (But Not to Disabled)³

Socially Desirable Traits

1	Quiet	63%	1	Mature	63%	1	Capable	77%
2	Honest	49%	2	Hard-working	60%	2	Talkative	73%
3	Gentlehearted	45%	3	Likable	57%	3	Outgoing	60%
4	Softhearted	45%	4	Self-disciplined	53%	4	Sociable	60%
5	Non-egotistical	43%	5	Well-mannered	51%	5	Fun-to-be-with	58%
6	Undemanding	40%	6	Good-natured	49%	6	Proud	58%
			7	Polite	46%	7	Desirable	57%
						8	Good-looking	57%
						9	Self-assured	56%
						10	Attractive	53%
						11	Intelligent	53%
						12	Amusing	51%
						13	Bright	51%
						14	Curious	51%
						15	Decent	49%
						16	Independent	49%
						17	Optimistic	49%
						18	Easy-going	48%
						19	Aggressive	47%
						20	Energetic	47%
						21	Humorous	47%
						22	Happy	44%
						23	Popular	43%
						24	Dependable	42%

Undesirable Traits

1	Isolated	80%						
2	Lonely	76%						
3	Helpless	75%		None				
4	Silent	73%						
5	Depressed	69%						
6	Unpopular	68%						
7	Distant	60%						
8	Shy	60%				1	Loudmouthed	62%
9	Unappealing	55%				2	Conceited	59%
10	Unsociable	55%				3	Demanding	55%
11	Nervous	54%				4	Argumentative	51%
12	Unaggressive	53%				5	Over-confident	51%
13	Insecure	51%				6	Phony	49%
14	Dependent	49%				7	Complaining	49%
15	Unhappy	49%				8	Bossy	47%
						9	Self-centered	47%

¹ Only those traits which were endorsed by $\geq 40\%$ of Ss for both male and female disabled students and by $\geq 39\%$ for either male or female able-bodied students are included.

² Only those traits which were endorsed by $\geq 40\%$ of Ss for all 4 stimulus persons.

³ As in 1 above, but for able-bodied and disabled, respectively.

Answer 4: Fewer socially desirable and more socially undesirable words were commonly attributed to disabled than to able-bodied students. In addition, while a few socially desirable traits were common to both disabled and able-bodied students, none of the undesirable traits were common to both groups. Clearly the stereotypes of disabled and of able-bodied students are very different.

Conclusions

Disabled students, both males and females, are perceived as having characteristics that are not only different from those of able-bodied students, but also less socially desirable: disabled males are seen especially negatively. Indeed, the disabled - able-bodied distinction is so strong that it over-rode even the effects of sex-role stereotypes.

Disabled students are characterized as aloof, introverted, lazy, submissive, ingenuous, and unassuming. These characteristics are the "opposite" of those attributed to able-bodied students: gregarious, extroverted, ambitious, dominant, arrogant and calculating. As people usually like and seek out similar others, one would expect able-bodied students to avoid or limit their contact with disabled classmates. Preconceptions can influence interaction if it does take place. As stereotypes tend to persist in the absence of exposure to contradictory evidence, information on factors which facilitate interaction is needed.

Situations and Behaviors

Goals

The goals of this study were to identify 1) commonly occurring situations involving physically disabled and able-bodied college students (dating was not included; this is the subject of one of our ongoing studies), and 2) frequent appropriate and inappropriate social behaviors by disabled and by able-bodied students in each situation.

Method

Disabled and able-bodied college students were interviewed in order to generate a list of common social situations and interpersonal behaviors in academic settings. Based on this list, a lengthy objective questionnaire was designed. Behaviors of physically disabled and able-bodied students were included. The questionnaire was completed by 24 disabled and 45 able-bodied college and university students (31 of whom had had significant contact with disabled people and 14 of whom had not). Some subjects (30%) had already left college. Subjects rated (on 6 point scales) how often each of 51 social situations occurred and how often various behaviors by both able-bodied and disabled students occurred. For each behavior, subjects also rated (on 6 point scales) the appropriateness of each response.

Results

Question 1: What are the salient aspects of the sample?

Table 1

Sample Characteristics						
	Disabled ¹		Able-bodied With Contact ²		Able-bodied Without Contact	
	Male	Female	Male	Female	Male	Female
# of Ss	14	10	10	21	8	6
Age (\bar{x})	28	28	28	28	33	20
Years Disabled						
\bar{x}	12	23				
Range	2-29	4-43				
Disabled Friends						
\bar{x}	1.8	1.4	1.6	1.6	0	0
% Who Have	50%	70%	78%	70%	0	0
Able-bodied Friends						
\bar{x}	6.6	9.6	9.4	4.6	7.5	8.5
% Who Have	100%	100%	100%	100%	100%	100%
Disabled Acquaintances						
\bar{x}	14.4	6.5	8.7	2.8	.6	1.3
% Who Have	93%	90%	100%	80%	40%	67%
Volunteer With Disabled	29%	50%	80%	58%	0%	0%
Have Disabled Relative ³	0%	0%	10%	19%	0%	0%
Comfort Level With ⁴						
Disabled Students	3.65	3.10	3.5	4.24	3.33	3.00
Able-bodied Students	3.85	3.00	2.80	3.95	4.29	3.50

¹ Wheelchair users - miscellaneous disorders.

² Subjects who either have a disabled friend or close relative or who have worked as volunteers with physically disabled people

³ Immediate family.

⁴ Ratings from 1 to 6. The higher the more comfortable.

Answer 1: All students in the sample had spent a minimum of 1 year at college. The majority of respondents were in their late twenties. For disabled college students, this is not unusual. Many disabled students 1) have spent years in special facilities for the disabled, 2) finished their high school diplomas by taking correspondence courses, 3) spent lengthy stretches of time hospital, thereby interrupting their education, and 4) have taken a reduced academic load in college. Since able-bodied students who have had contact with disabled students were, for the most part, solicited by the disabled subjects, it is hardly surprising that they would be of similar age. The able-bodied subjects who have had little or no contact with disabled students constitute an ad-hoc comparison group. This group was included for hypothesis generation, and not as a true "control" or comparison group.

Disabled students, like the able-bodied, have many more able-bodied than disabled friends. They also are just as comfortable with able-bodied as with disabled students. Thus, the notion that, "Disabled people prefer to be with their own kind," certainly appears to be untrue, at least for college students

Question 2: What are the psychometric properties of the questionnaire?

Table 2

Psychometric Data

Criteria	Spearman's ρ ¹	p
Test-retest Reliability (12 Social Situations)	.799	.4.05
Ranking of Frequencies of Social Situations		
Able-bodied Student Initiates Behavior (19 Situations)		
By Disabled Male and Female Subjects	.794	<.01
By Able-bodied Male and Female Subjects with Contact	.824	<.01
By Disabled and Able-bodied Subjects with No-Contact	.853	<.01
Disabled Student Initiates Behavior (32 Situations)		
By Disabled Male and Female Subjects	.744	<.01
By Able-bodied Male and Female Subjects with Contact	.604	<.01
By Disabled and Able-bodied Subjects with No-Contact	.720	<.01

¹ Spearman's Coefficient of rank correlation.

Answer 2: As this was an exploratory, preliminary measure, little psychometric information was obtained. Test-retest reliability and rankings of the frequencies of social situations suggest that this aspect of the measure is reasonably reliable.

Question 3: Do able-bodied students know what behaviors by able-bodied people toward disabled people are appropriate? Do disabled students know what behaviors by disabled people toward able-bodied students are appropriate?

Table 3

Relationships Among Appropriateness Ratings of Frequent Behaviors

Ratings by:	Able-bodied Ss with Contact	Able-bodied Ss without Contact
Behaviors of Able bodied Students		
Disabled Ss	.941**	.809**
Behaviors of Disabled Students		
Disabled Ss	.744**	.700**

Pearson r values. df = 29 for behaviors of able-bodied students, df = 26 for behaviors of disabled students.
** p < .01.

Answer 3: Disabled students and able-bodied students agree on what constitutes appropriate behavior by both groups.

Question 4: In frequent social situations, how appropriate are common behaviors?

Table 4

Social Appropriateness of Frequent Behaviors

Ratings by:	Disabled Ss	Able-bodied Ss with Contact	Able-bodied Ss without Contact
Behaviors of:			
Able-bodied Students			
\bar{x}	4.914	4.452	4.915
SD	(.314)	(.922)	(.815)
Disabled Students			
\bar{x}	4.707	4.309	4.500
SD	(.561)	(.481)	(.547)

Scores range from 1-6. The higher, the better.

Answer 4: Frequent behaviors, by both disabled and by able-bodied students, are socially appropriate. For each of the frequent social situations, a variety of appropriate responses by able-bodied and disabled students exist. A manual ("Disabled - Able-bodied Student Interaction") of frequent social situations and behaviors (with social appropriateness ratings by disabled and by able-bodied students) is presently being prepared.

Table 5 (cont'd)

Rank	Social Situation
20	A and some classmates are planning to go out and get drunk to celebrate the end of exams. Everyone is talking about which bar to go when D arrives.
21	A is sitting with some friends in the cafeteria. D whom A doesn't know well comes and joins the group. They are introduced and shortly thereafter everyone leaves. A has 15 minutes before class.
22	A is organizing the students in the class to meet at a campus -acquainted party. D told A that s/he doesn't intend to go. A insists that D attend.
23	A insists on helping D move his/her wheelchair up a step, even though D has said s/he could manage alone.
24	A and D have been assigned to work together on a project.

Ranks are based on frequency ratings by both able-bodied students who have had contact with disabled people and by disabled students.

Answer 5: The situations listed above encompass both "typical College" social situations as well as situations relating specifically to disability (e.g., transportation, help, curiosity, and concerns about the wheelchair).

Conclusions

Results show that disabled students tend to be older than the "average" college student. They feel comfortable with able-bodied students and, like the able-bodied subjects, have many more able-bodied than disabled friends. At least for college students, the notion that disabled people prefer "their own kind" appears to be untrue.

Frequent behaviors by both able-bodied and disabled students were found to be socially appropriate. In addition, disabled and able-bodied students agreed on what appropriate behaviors are by both groups. This suggests that lack of knowledge about what constitutes effective behavior is not a likely cause of social strain. Nevertheless, investigation of knowledge of appropriate behavior in a more typical "college age" sample seems warranted. We are, at present, investigating this issue.

Self-efficacy Interacting

Goals

The purpose of this study was to develop a measure of self-efficacy (Bandura, 1977) in interacting socially with physically disabled students in academic settings.

Method

A 49 item self-efficacy questionnaire was designed. Item selection was based on interviews and the literature. Two scores are derived from this measure: Level of Self-efficacy (% of items subjects indicate they can do comfortably) and Strength (degree of certainty (10-100) in being able to do each task comfortably). 136 able-bodied college students were administered this questionnaire in one of 4 experimental conditions: stimulus person physically disabled (wheelchair user) male, disabled female, able-bodied male, able-bodied female college student. Only ratings of same-sex stimulus persons were made. Those who completed the questionnaire in the 2 disabled conditions also completed the Attitudes Toward Disabled Persons (ATDP) Scale (Yuker et al., 1970) and answered questions concerning: 1) previous contact with disabled people and 2) comfort interacting with physically disabled and with able-bodied college students.

Results

Question 1: How reliable is the questionnaire?

Table 1

Internal Consistency: Split-Half Reliability¹

	Level ²	Strength ³
Disabled		
Male	.948	.949
Female	.980	.990
Able-bodied		
Male	.977	.960
Female	.940	.970

¹ Spearman-Brown r values.

² Level = number of tasks subject can do comfortably.

³ Strength = degree of confidence (10-100) in being able to do each task.

Answer 1: The questionnaire is internally consistent.

Question 2: How valid is the questionnaire?

Table 2

Discriminant Validity I: Ratings of Self-efficacy in Interacting with Disabled and with Able-bodied Students

	Level of Self-efficacy ¹		Strength of Self-efficacy ²	
	Disabled	Able-bodied	Disabled	Able-bodied
Male	79.55	76.65	64.36	58.75
Female	80.82	79.24	61.05	58.44

n ranges from 20 to 41/cell.

F tests. All comparisons n.s.

¹The higher the score, the more tasks subject was able to do.

²The higher the score, the more confident in being able to do tasks.

Table 3

Discriminant Validity II: Ratings of Self-efficacy in Interacting with Disabled Students by Able-bodied Students With and Without Contact with Disabled People

	Level of Self-efficacy		Strength of Self-efficacy	
	Contact	No-Contact	Contact	No-Contact
Male	77.37	78.00	67.64	61.95
Female	87.00	68.47	70.00	49.31

n ranges from 15 to 22/cell.

Interaction, $p < .05$

Females with Contact > Females

with No-Contact, $p < .01$

Males with Contact = Males with

No-Contact, n.s.

n ranges from 14 to 21/cell.

Interaction, $p < .05$

Contact > No-Contact, $p < .05$

Females with Contact > Females

with No-Contact, $p < .01$

Males with Contact = Males with

No-Contact, n.s.

Table 4

Concurrent Validity: Correlations with Other Measures

	Level ¹	Strength ¹	ATDP ²	Comfort with Disabled Students	Comfort with Able-bodied Students
Level ¹		.790***	-.114	.212	.174
Strength ¹	.828***		.154	.095	-.009
ATDP ²	.401**	.335*		.063	.186
Comfort with Disabled Students ³	.313*	.303 [✓]	.217		.790***
Comfort with Able-bodied Students ³	.284 [✓]	.242 [✓]	.261 [✓]	.618***	

Pearson r values.

Scores of Males above and of Females below the diagonal.

¹ Level and Strength of Self-efficacy with disabled students.

² Attitudes Toward Disabled Persons (Yuker et al., 1970).

³ Ratings from 1-6. The higher, the more comfortable.

Answer 2: Validity data indicate some discriminant and concurrent validity, but only for females.

Conclusions

A preliminary step was made in the development of a measure of Self-efficacy in interacting with physically disabled students. Further work (e.g., alteration of demand characteristics, item and factor analyses) needs to be carried out. The discrepancies between the response patterns of able-bodied male and female subjects warrant additional investigation.

CONCLUSIONS

The results of Study 1 showed that disabled students, both males and females, are perceived as having characteristics that are not only different from those of able-bodied students, but also less socially desirable. Disabled males are seen especially negatively.

Disabled students are characterized as aloof, introverted, lazy, submissive, ingenuous, and unassuming. These characteristics are the "opposite" of those attributed to able-bodied students. As people usually like and seek out similar others, one would expect able-bodied students to avoid or limit their contact with their disabled classmates. Preconceptions can influence interaction, if it does take place.

The quality of social interaction is governed by numerous variables. In order to better understand factors which facilitate or hamper social interaction between disabled and able-bodied students, information on 1) the types of social situations which occur frequently and on 2) the nature of appropriate behaviors by both disabled and able-bodied students is needed.

In the second study, we obtained extensive information on these two variables. In stark contrast to the dismaying findings of the study on stereotypes, in Study 2 we found that not only did disabled and able-bodied subjects agree about what are appropriate behaviors by both groups, but that frequent behaviors by both disabled and able-bodied students are socially appropriate. It should be noted, however, that our sample of able-bodied students was by no means representative of college students in general. We are, therefore, presently investigating knowledge of appropriate social behavior in a more typical college sample.

The literature, with some notable exceptions (e.g., Kleck, Snyder), is largely anecdotal. Nevertheless, numerous reports suggest that social interaction between able-bodied and disabled people is by no means as trouble free as is suggested by our data. Therefore, we intend to examine actual social behavior, rather than rely exclusively on self-report. The manual that emerged from Study 2 (frequent social situations and frequent and infrequent appropriate and inappropriate behaviors by both disabled and able-bodied students) should be useful in the development of a set of externally valid role-play scenes and an empirically based coding and scoring system. The manual should also be of use in preparing inexperienced able-bodied and disabled students for interaction.

Should social behavior between able-bodied and disabled students be found to be problematic, the factors responsible should be investigated. In addition to lack of knowledge concerning what is or is not appropriate, poor social skills may be due to "response inhibition" caused by factors such as 1) faulty perceptions (e.g., stereotypes), 2) social-evaluative anxiety, and 3) cognitive variables, such as expectation of negative consequences, negative self-statements, and feelings of being incapable (lack of self-efficacy). Our attempt to develop measures of stereotyping, of self-efficacy, and of knowledge of appropriate social behaviors are part of the investigation of factors which hamper or facilitate social interaction between able-bodied and disabled college students.

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