Student Perceptions Of The Accommodation Process in Postsecondary Education[1, 2]

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Abstract

One cause of the underrepresentation of students with disabilities in postsecondary education may be a lack of appropriate and effective accommodations (e.g., West et al., 1993). This study hypothesized that ineffective and inappropriate accommodations result from an accommodation selection process that focuses on disability type rather than students' contextual and functional needs. Quantitative and qualitative methodologies were used to obtain students' perspectives of the accommodation process and experienced or potential barriers to their participation in postsecondary education. Students with disabilities completed surveys (n=108) and participated in focus groups (n=104). These students, who had various disability conditions, attended 15 community and technical colleges in California, Minnesota and Kansas. Participants' responses reflected satisfaction with certain practices and procedures as well as a need for improvements in others. More individualized methods of accommodation selection that consider the context of students' lives, individual functional needs, trade-offs between immediate and long-term costs and benefits and incorporate systemwide universal design concepts are presented as an alternative framework for consideration by Disability Support Services staff.

In the 15 years since the passage of the Americans with Disabilities Act (ADA of 1990, P.L. 101-336) more and more people with disabilities have been brought out of their homes and institutions and into the larger community. People with disabilities have increased their employability, earnings and consequently quality of life by attending college and completing a postsecondary degree (National Council on Disability, 2003). First-time, full-time freshman with disabilities attending college increased fourfold between 1978 and 1994, from 2.6% to 9.2% (Henderson, 1995, as cited in Leyser, Vogel, Wyland & Brulle, 1998). More recent statistics report that students with disabilities make up approximately 9% of the total U.S. college population (Horn, Peter & Rooney, 2002; U.S. Department of Education [USDE], 2000, 2003). Nevertheless, people with disabilities are still underrepresented in the postsecondary student population when compared to the K-12 student and general populations, 13.4% (USDE, 2003) and 19% respectively (U.S. Census Bureau, 2000).

Even though the ADA and Section 504 of the Rehabilitation Act of 1973 have granted them the legal right to equal access to postsecondary education, people with disabilities do not appear to access it in equal proportion to others. One reason for this lower access may be the shift of responsibility for identifying disability and requesting disability support services from the school in the K-12 settings to the student in the postsecondary settings (Richard, 1995). This may lead to underreporting—due to various contextual reasons such as concerns about

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social stigma, or a universally designed campus that makes additional services, and thus self-identification, unnecessary—rather than actual underrepresentation of students with disabilities. However, the best data available to researchers indicate that people with disabilities are not participating in postsecondary education to the same degree as their nondisabled counterparts.

Researchers frequently cite a lack of appropriate and effective accommodations and knowledge of and attitudes toward disability as the barriers discouraging full participation. For example, in a survey of 761 college students with disabilities West et al. (1993) found that 86% of respondents had encountered barriers to education because of their disabilities, most of them disability-specific and directly related to the accommodations they did or did not receive. McCarthy and Campbell (1993) asserted that institutions of higher education needed to do more to increase their support services and staff development as a means of increasing programmatic access to education for students with disabilities. More recently, others (e.g., Pacifici & Elacqua, 1997; Kruse, McKinney, & Rapaport, 1998) have noted that faculty and staff exhibit a lack of knowledge and limited understanding of disability issues and their manifestations in the postsecondary setting, negatively affecting the manner in which faculty interact with students with disabilities. Finally, Mull, Sitlington, and Alper's (2001) synthesis of the literature from 1985 to 2000 concluded with a recommendation for researching accommodations' effectiveness and supports for students with disabilities at the postsecondary level.

Two models of accommodation for students with disabilities proposed by Smith (1993) and Dunn, Brown, and McGuigan (1994) along with our own observations led us to the following hypothesis: Ineffective and inappropriate accommodations result from an accommodation process that focuses on disabilities rather than students' contextual and functional needs. Acknowledging that disability support services for postsecondary students vary considerably from institution to institution (Mull et al., 2001), we have observed that the accommodation process frequently consists of selecting from a list of accommodations, or a "menu of services" typically associated with a disability with little regard to other contextual factors—albeit selection is made on a case-by-case basis (Richard, 1992).

Smith (1993) drew a distinction between accommodations that are adaptive/assistive, which help compensate or substitute for a human function that has been lost (e.g., orthodics, prosthetics, and wheelchairs), and those that are rehabilitative/educational, which improve the function of an individual (e.g., biofeedback, cognitive retraining, computer software programs, and passive range of motion machines). The critical concept underlying the differentiation is the trade-offs that often must be made between immediate and long-term costs and benefits of each. For example, adaptive/assistive accommodations such as a scribe or a reader, while immediately powerful, are expensive over the long run, do not develop the individual's skills in dealing effectively with such tasks, leave him or her dependent on someone else, and create a distinction in a social setting (Mellard, Hall & Parker, 1999). On the other hand, rehabilitative/educational interventions that enable the individual to write or read without assistance are less immediate but result in greater independence, generally at a lower overall cost. Therefore, when selecting an accommodation in the postsecondary educational environment, we believe that the students themselves should participate in these trade-off decisions.

Dunn and her colleagues (1994) further contributed to our thinking about the accommodation process in their discussion of the ecology of human performance (EHP). These authors emphasized the need to factor context into disability evaluation and intervention processes because "ecology, or the interaction between person and the environment, affects human behavior and performance, and that performance cannot be understood outside of context" (Dunn et al., 1994, p. 598). The context for students with disabilities in postsecondary education is very individualized with each student having his or her own educational, employment and personal goals, personal circumstances, financial resources, and so on. Therefore, accommodation needs not only differ from student to student, but from one circumstance to another for each student.

This study was designed to determine student perceptions of the accommodation process and its possible effects on participation for students with disabilities in postsecondary education. Our hope is the findings will aid Disability Support Services (DSS) and other college faculty and staff in their efforts to ameliorate barriers to participation in postsecondary education for students with disabilities.

Method

Research Design

At the time we initiated our study many community and technical colleges did not maintain comprehensive records about students with disabilities, thus limiting the opportunity for both prospective and retrospective research designs. Therefore, we selected a mixed-research design comprised of a quantitative survey methodology and a qualitative focus group interview methodology.

Participants

Participants were selected using a two-stage process, which Bracht and Glass (1968) explicated as having external validity: (a) a target population of persons and settings was defined, and (b) samples were drawn to represent this population. We defined the target population as students with disabilities currently enrolled in postsecondary education at community and technical colleges and receiving services from the colleges' DSS programs. DSS staff at each college identified possible participants based on the following inclusionary criteria and elicited their participation: diverse age, experiential and disability-related backgrounds (e.g., learning disabilities, emotional/behavioral, psychiatric disabilities, physical disabilities, deaf/hard of hearing, blind/low vision, chronic illnesses, cognitive disabilities and speech/language disorders).

Settings. We selected three states from which the sample would be drawn: Kansas, Minnesota, and California. These states were not randomly selected, but rather were chosen for their diversity along several dimensions: geography, number of community and technical colleges, racial and ethnic diversity, eligibility requirements for disability services, and state administrative organization.

The states' differing organizational frameworks were an important consideration in our attempt to gain a broad perspective on student perceptions of the accommodation process. For example, Minnesota's community colleges, technical colleges, state colleges and universities were at the time of the study undergoing reorganization into the Minnesota State College and Universities (MNSCU) system, ending their history of operating as separate entities or tiers of 2 and 4-year programs. California community and technical colleges, on the other hand, have a long history of confederation—operating as a state-level organization—with the unique feature of state reimbursement to the colleges for the direct excess cost of providing services to students with disabilities. Finally, the Kansas colleges do not have the integrated system of either Minnesota or California; consequently, policies addressing support for students with disabilities are unique to each college.

We contacted 16 DSS administrators—seeking five from each state—requesting their participation in the study. Only one Californian college chose not to participate, citing a significant number of recent personnel changes and an upcoming accreditation review as impediments to active involvement in the study. One college in Minnesota was unique in that staff from campuses in two locations participated. Thus, while 15 colleges were included in the study, 16 different campuses were represented, increasing the numbers of participants from Minnesota in the sample. The 15 participating colleges ranged in enrollment size from 23,356 to 1,031 students (see Table 1). The number of students with disabilities, as reported by the DSS offices, ranged from less than 1% of the total student population to 8.7%, with only three of the colleges reporting the percentage of students with disabilities within the national average of 9% (USDE, 2003).

Students. DSS staff drew a sample set of 108 participants from the students they serve. We paid each student $40 for his or her participation in a group interview and survey completion.

In the sample set of students 65% (*n*=70) reported having one primary disability whereas 35% (*n*=38) reported having two or more disabilities. Students' self-reported primary disabilities included 39% learning disabilities (*n*=42), 2% emotional/behavioral (including ADD, ADHD) (*n*=2), 2% psychiatric (*n*=2), 23% orthopedic/mobility (*n*=24), 13% deaf/hard of hearing (*n*= 14), 9% blind/visually impaired (*n*=10), 4% traumatic brain injury (*n*=4), 6% chronic illnesses (*n*=6), and 2% speech/language disorders (*n*=2). Students' average age was 30 (range = 18-60, *SD*= 11.2). The sample consisted of 49% male (*n*=53) and 51% female (*n*=55) participants.

The students represented racial and ethnic diversity common to the participating colleges. Of those reporting race and ethnicity, 75% were White, non-Hispanic (*n*=78), 9% African American (*n*=9), 6% non-White, Hispanic (*n*=6), 5% Asian (*n*=5), 3% White, Hispanic (*n*=3) and 2% Native American (*n*=2). Thirty-five percent (n=38) of students were enrolled full time (12 or more credit hours per semester) and 65% (*n*=70) were enrolled part time (less than 12 credit hours per semester).

Fifty-three percent (*n*=57) of the students with disabilities in the sample reported not working while attending college, whereas 42% (*n*=45) worked at least two hours per week. Six students did not specify their work status. Of the 45 students who reported working while in school, only 13% (*n*=6) worked full time (more than 30 hours per week). The other 87% (*n*=39) worked part-time, mostly in a range of 10-15 hours each week. Students' employment included both on-campus and off-campus jobs.

Instruments

Survey instruments and interview protocols were developed to obtain relevant demographic and contextual data and to assess the perceptions of students with disabilities regarding the accommodation process and other potential barriers to participation in postsecondary education. The survey instrument queried students about the accommodation process; focus group interviews were

Table 1

Site Characteristics and Numbers of Participants by Site

Site #	Location	Total Enrollment	# of Students with Disabilities[a]	% of Students with Disabilities	Focus Group Participants
Site 1[b]	California	13,984	1,103	7.9%	10
Site 2[b]	California	9,999	66	0.7%	5
Site 3[b]	California	14,618	427	2.9%	6
Site 4[c]	California	7,258	283	3.9%	7
Site 5[c]	California	23,356	2,037	8.7%	3
Site 6[b]	Minnesota	7,776	Not available	Not available	10
Site 7[b]	Minnesota	5,104	94	1.8%	10
Site 8[b]	Minnesota	4,228	177	4.2%	11
Site 9[c]	Minnesota	1,031	54	5.2%	4
Site 10[c]	Minnesota	3,548	305	8.6%	9
Site 11[b]	Kansas	1,214	Not available	Not available	9
Site 12[b]	Kansas	2,728	11	0.4%	8
Site 13[b]	Kansas	5,694	61	1.1%	6
Site 14[c]	Kansas	3,265	28	0.9%	3
Site 15[c]	Kansas	16,743	246	1.5%	3

[a]Students with disabilities as reported by each college's Disability Support Services (DSS) office;

[b]Average for Fall 1998-Fall 2001; [c]Average for Fall 1999-Fall 2001.

intended to probe for specific, factual incidents that would lend a deeper understanding of the survey data and provide insight into the accommodation processes the students had faced in their postsecondary education experience.

Field tests. Four colleges participated in field tests of focus group questions and survey content and format. Two interviewers, including the second author, conducted the focus groups and administered the surveys using the protocols as described below. The survey instrument and focus group questions were revised based on the field tests in an effort to increase the questions' clarity and shorten the overall activity.

Survey instrument. The survey contained four parts: (a) demographic and student context information, (b) accommodation process satisfaction survey, (c) factors affecting the choice of accommodation(s) survey, and (d) open-ended question regarding accommodations the participant had used and their effectiveness.

In addition to basic demographic information, students were asked in the first part to provide their individual context, consistent with the EHP model of accommodation (Dunn, et. al., 1994): college career and future plans, disability support services, current employment, social background, and disability categories that applied to them. The survey posed four questions about how participants disability previously affected their academic experience and provided space for elaboration; this survey item was followed by a list of 29 areas of difficulty students with disabilities may experience in their education; participants were to mark each item that personally applied to them. The context portion of the survey asked participants to list one accommodation that they used in their current college setting and to briefly explain how they had obtained it.

The second part of the survey, presented in Table 2, consisted of five statements about the accommodation(s) participants had used and a Likert-type scale for indicating degree of agreement or disagreement. Statements addressed satisfaction with the accommodation selection process, the accommodation(s) provided, accommodation effectiveness, how others discuss disabilities with the student, and how confidentiality is kept regarding the student's disability.

Table 2

Student Satisfaction with Accommodation Process

Statement: I am satisfied with:	Mean level of satisfaction	Standard Deviation	*N*
... the process used in selecting an accommodation for me	4.08	.935	93
... the accommodation provided for me	4.18	.876	101
... the effectiveness of my accommodations	4.10	1.015	97
... the way my disability is discussed with me	4.04	.936	99
... that my disability is kept confidential	4.34	.888	97

Note. The higher the mean, the more important the factor is to the student (range=1-5 with 1=unimportant and 5=very important); Varying *n*'s are due to non-responders.

The third segment of the survey presented 12 factors that may affect the selection of an accommodation and a Likert-type scale for indicating degree of importance. Factors included: amount of training required, appropriateness for various tasks, availability, cost to student, cost to school, ease of use, effectiveness, increased independence, currently or previously used by another student, student's own previous use, disability, use across various environments or portability. The fourth and final segment of the survey directed participants to list accommodations currently and previously used and to indicate whether they were effective or not effective for the participant.

Focus group interviews. Specially designed focus group interview protocols posed a series of questions along the lines of "remembering stories of when ..." and the way in which respondents' disabilities affected various academic and non-academic activities in college. The protocol provided interviewers with prompts for stories about recruitment, registration, financial aid, academic advising, enrollment, orientation, placement testing, course instruction, labs and fieldwork experiences, course testing, course assignments, degree requirements, graduation, transfer and employment, housing, campus transportation, recreational activities, and social opportunities. The protocols continued with questions looking for strengths, weaknesses, and priorities related to accessibility in four environments: physical, informational, programmatic/policy, and attitudinal. The final questions in the interview protocol addressed accommodation selection, training and evaluation, and the colleges' involvement of students with disabilities in policy setting about and evaluation of disability services.

Procedures

Two interviewers conducted on-site focus group interviews and administered written surveys at each of the 15 community and technical colleges. Interviews were conducted and surveys administered in three phases over a three-year period ending in 2001. During Phase 1 (Fall 1998-Summer 1999) data were collected from nine of the participating colleges – three from each state. In Phase 2 (Fall 1999-Summer 2000), data collection activities included the six remaining colleges in addition to the initial nine. The third phase of data collection (Fall 2000-Fall 2001) included all 15 colleges in the sample.

Focus group interviews. The colleges' DSS staff arranged for an on-campus location where the focus group interviews could take place. With one exception, none of the DSS staff attended the interview sessions. The sessions were videotaped to release the interviewers from the note-taking burden; however participants were free to request that the videotaping be stopped at any time; on occasion, this took place for brief segments. We also made the videotapes in anticipation of the need for video clips for inclusion in DSS staff development materials, which we intended to create as a staff development product. Interviewers obtained informed consent from all participants before the discussion groups and videotaping began. Each interview lasted approximately two hours, and included between 3-11 participants. Because the focus groups were arranged at the discretion of DSS staff, group numbers across sites varied. Furthermore, in some instances students' class schedules prevented them from participating in focus group activities even though they had completed surveys. The number of focus group participants per state was similar.

Survey completion. Interviewers presented participants with questionnaires to be completed at the end of the focus group interviews. Students with scheduling conflicts and prior commitments (e.g., class, transportation, childcare, work) were permitted to return their completed surveys by mail. Compensation for participation was made afterward. At two colleges seven participants were permitted to respond to the written survey without participating in the focus group interview; at another school three focus group participants were excused from completing the survey.

Data analysis. Survey data were coded for statistical analysis. Open-ended survey responses were categorized into standard groups as themes emerged for analysis. Descriptive statistics were utilized for analyzing student responses on demographic items, Likert-type satisfaction scales, accommodation effectiveness and accommodation selection factors from the survey. Further analyses of student satisfaction data warranted the use of analysis of variance.

Focus group videotapes were transcribed, coded, and analyzed by project staff for recurring themes. Among the themes that emerged, student perceptions of the accommodation process was prominent along with various barriers to postsecondary education. These themes coincided well with questions from two sections of the student survey and proved to complement the analysis of the survey findings as described further below.

Findings

Survey Findings

Due to space limitations, the findings presented here focus on Sections 2 and 3 of the student survey – satisfaction with the current process for accommodation selection and factors considered important when selecting accommodations.

Satisfaction. Student satisfaction ratings regarding various aspects of accommodation process appear in Table 2. The highest satisfaction ratings were given to confidentiality about one's disability with a mean score of 4.34 (*SD* = .888) on a scale of 5 = very satisfied and 1 = not at all satisfied. Lowest ratings were given to the way in which others discuss a participant's disability with him, or her with a mean score of 4.04 (*SD* = .936). Satisfaction with statements addressing the accommodation selection process, the accommodation themselves, and their effectiveness were rated similarly, with mean scores between 4.18 and 4.08 (*SD*=. 876 and .935).

Based on the focus group observations, a post hoc analysis was performed of the satisfaction portion of the survey to distinguish between participants who were under 25 years of age and those 25 and older. Participants 25 years of age and over reported lower mean levels of satisfaction on all statements than their younger counterparts, although ordinal rankings were the same for both groups (see Table 3). Statistical power was very low, rang-

Table 3

Student Satisfaction Ad Hoc Analysis by Age

	Age					
	Under 25		25 and Over			
Statement:	Mean	*SD*	Mean	*SD*	Partial η^2	Power
I am satisfied with:						
... the process used in selecting an accommodation for me	4.21	.767	3.98	.961	.017	.213
... the accommodation provided for me	4.41	.595	4.15	.823	.033	.366
... the effectiveness of my accommodations	4.33	.898	4.15	.910	.011	.150
... the way my disability is discussed with me	4.15	.904	3.78	.988	.038	.413
... that my disability is kept confidential	4.49	.683	4.22	.962	.025	.292

Note. Under 25 group, *n* = 39; 25 and-over-group, *n* = 41; In this analysis only respondents who completed all five items are included, eliminating concern with patterns of missing data.

ing from .15 to .41; the calculated effect size (calculated as ç²) was 1%-3%. The results of MANOVA tests showed that the mean level of satisfaction between these two groups was not statistically significant; however, a practical significance did exist. Further evidence of this difference was encountered during focus group discussions, which are discussed in detail below. In brief, students who were older (over 25) tended to have more life experiences that include the use of various accommodations in the workplace. They also had lived with their accommodations longer and had developed compensatory strategies for many of their activities of daily living. Therefore, when requesting an accommodation in college, the older students were more likely to express dissatisfaction with certain accommodations or the process for obtaining accommodations.

Factors in selecting accommodations. Twelve factors that were important to students in selecting accommodations are presented in Table 4. Effectiveness of accommodation was ranked highest with a mean level of

Table 4

Factors Important to Students in Selecting an Accommodation

Factors	Mean level of importance	Standard Deviation	*N*
Effectiveness of accommodation	4.69	.631	100
Availability of accommodation	4.51	.770	101
Increased independence	4.45	.940	99
Ease of use	4.44	.818	101
Your disability	4.20	1.082	100
Appropriateness for different tasks	4.05	1.093	97
Cost of accommodation to you	3.96	1.315	98
Social acceptance	3.62	1.434	101
Your own previous use of the accommodation	3.58	1.363	99
Amount of training required	3.57	1.440	94
Cost of accommodation to your college	3.20	1.523	101
Currently or previously used by a student	2.80	1.412	97

Note. The higher the mean, the more important the factor is to the student (range=1-5 with 1=unimportant and 5=very important); varying *n*'s are due to non-responders.

importance of 4.69 (5 = very important and 1 = unimportant). Availability of the accommodation, increased independence, and ease of use were the other leading factors in selecting an accommodation. Issues such as cost to students or the college, social acceptance, and training were not deemed as important.

Effectiveness of accommodations. Students reported their perceptions of the effectiveness—or ineffectiveness—of various types of accommodations that they had used in the past or were currently using (see Table 5). Students who had used note takers, extended time on tests, adaptive technology, moving to a different location in the classroom, and public transportation rated these accommodations effective 80-88% of the time. A slightly lower percentage (64-78%) of the students who had used tutors, tape recorders, alternative test locations, taped texts and notes, and mental health counseling services perceived these accommodations as effective. The one student who reported receiving class notes ahead of time reported that this was a completely ineffective accommodation.

Table 5

Student Reports of Accommodation Effectiveness

Accommodation	Students Reporting Use	% Reported Effective[a]
Note takers	24	87.5%
Extended time on tests	35	85.7%
Adaptive technology	11	81.8%
Moving to different location in the classroom	5	80.0%
Public transportation	5	80.0%
Tutors	18	77.8%
Tape recorder	4	75.0%
Alternate testing location	11	72.7%
Taped texts/notes	9	66.7%
Mental health counseling services	11	63.6%
Copy of notes ahead of class	1	0.0%

[a]Percent of students who reported using the accommodation.

Focus Group Findings

Four recurring issues emerged from the focus group interviews that seemed to enhance the results from the survey: a sense of belonging, access to academic information, supports for independence, and labeling disabilities as they relate to discrimination. A fifth category of comments also was evident in the focus groups: self-determination, or students' expressions of their willingness to work through the difficulties they encounter.

A sense of belonging. Of first importance, participants indicated they wanted to feel accepted, to belong in the college setting. Three students described their experiences. At a Kansas community college a student with a visual impairment expressed her feelings in this way:

> *"For one thing girls don't belong in science and for another thing blind girls don't belong in science ... It's just kind of the feeling that you just get from them [instructors] that you're just there in their class but they don't expect you to do anything great."*

In other cases, a lack of belonging was felt when people try to be helpful. For instance, one student with a physical disability from a community college in Kansas said:

> *"Since my injury, people have gone from what I could do to what I need help doing. My image of myself is put so small because it's gone from 'I can do this' to 'Let's help you do this'"*

Sometimes the accommodation process itself interfered with a student's sense of belonging. A student with a learning disability from a Kansas community college shared the following:

> *"Let's say I have to take a test; everybody in that classroom knows I'm gone, so the first thing they ask when I come back, 'why weren't you at the test man, you missed the test?' 'Well I took, my test in a different room.' 'Why . . .?' 'I have a learning disability.' It's not easy. Its basically saying 'Yeah, I'm different.' Different is ok but its not easy to say that. You don't want people to know your personal business."*

Access to academic information. A second theme in the focus groups related to obtaining access to academic information as easily and readily as other students. In some cases teachers reportedly did not know how to make accommodations for students with disabilities, such as the following case provided by a student with a psychiatric disability from a California community college:

> *"It's hard on students that do have disabilities because they do get frustrated and it's like they become unsuccessful because … they want to and they have the desire to and they have the drive to making something of themselves, but they can't if you have somebody who doesn't know how to teach you."*

In other instances students reported that teachers resisted accommodations designed to make academic information accessible to students with disabilities. For example, at a community college in Kansas a student with a hearing impairment reported:

> *"She [the instructor] didn't understand the concept of interpreters in her classroom and that was the most frustrating. She didn't like the idea of interpreters in the classroom at all ... she thought that since I was oral that I really didn't need interpreters too."*

In other situations accommodations were inadequate and, thus, the reason why academic information was inaccessible. The following example illustrates that even an appropriate intervention (e.g., a notetaker) may not be effective due to extenuating circumstances and as a result create other frustrations for the student. At a Minnesota community college one student with a learning disability said,

> *"One time I asked for a note-taker and I couldn't read what they wrote."*

Supports for independence. Availability of supports that enable independence, such accessible transportation, housing and even restrooms, was a recurring theme in the interviews as well. In some cases the supports were in place but were limited in some way, such as a student with a physical disability from one of Minnesota's community colleges, who described a transportation dilemma:

> *"... they had a limit on how many para-transit rides you could use, which didn't even begin to allow me to go to school let alone allow me to do other campus trips."*

A Minnesota community college student with an apparent mobility impairment reported a lack of supports relating to accessible restrooms as follows:

> *"I still have to go down to either the first floor or the ground floor (to find an accessible restroom) and I work up on the fourth floor. So to take 10 minutes all the time to go to and use the restroom-that shouldn't happen."*

Labeling and discrimination. Finally, students were concerned about not being labeled or discriminated against because of their disability or the accommodation(s) provided. In some cases the concern was internal to the students, such as the following shared

by a student with a chronic illness at a California community college:

"I don't want to walk through a door and have someone say 'You're disabled'. I just want to be included as a normal student."

One student at a community college in Kansas expressed concern by suggesting that "*more knowledge (be) put out about the services available … so it isn't a stigma for the students to have to come here [the support services office]."*

However, for some students, the issue was far beyond labeling, to the point of behaviors they perceive as discrimination. These feelings were expressed in various ways such as the three examples below:

"There's a lot of teachers too that don't agree with this disability because they can't see it." – student with a psychiatric disability at a California community college

"Granted, I'm disabled but I'm not dysfunctional." – student with a visual impairment at a California community college

"Teachers have said, 'you teach her, I don't teach these kind of students.'" – student with a learning disability at a Kansas community college.

A more subtle, yet important point made regarding labeling and accommodations came from a blind student at a California community college, who stated that "*people with the best of intentions get the idea that people with the same disabilities need the same things and this is not always true. I've been blind from birth and there are students here on campus who have either partial vision or who got blind later in life and their needs are totally different from mine in a lot of areas, and I think I've had a hard time conveying that."*

Self-determination. Despite issues students faced, many expressed a willingness and confidence in their ability to overcome the difficulties and achieve their academic goals. Several examples speak to such optimism.

"I just learned here that it's up to me. If I want to use the program [DSS] I can. If I don't want to, I don't. If I want professors to hear me, I have to go talk to them. They're aware that there are students with disabilities in class but they don't know who. Its up to me." - student with a learning disability at a Kansas community college

"You have to have confidence and also have knowledge of your disability so you can understand it yourself … That comes over time and you have to have good coaches behind you in order to do it. People that are disabled and are at college means we are advocating for ourselves." - student with a learning disability at a California community college

"Recognizing yourself and what your needs are is really, really important. If you don't acknowledge your personality traits, how others see you, you won't know what your needs are and you'll end up feeling frustrated and angry all the time." – student with a psychiatric disability at a California community college

"I think I always wanted to come to college but the first time I didn't have the skills to face my learning disability. I didn't want to admit that I couldn't do it because I can do it. I just need to do it a different way." – student at a Minnesota community college

Discussion

The findings reflect favorably, although not conclusively, on our initial hypothesis that ineffective and inappropriate accommodations result from an accommodation process that focuses on disabilities rather than students' contextual and functional needs. Consider the accommodations typically found on colleges' "menu of services" that participants rated as ineffective at least 25% of the time: tape recorders, alternate testing location, taped texts and notes, mental health counseling services, and copies of notes ahead of class. These accommodations are not necessarily bad, but the ecology of human performance (EHP) model (Dunn et. al., 1994) would postulate that on many occasions they were the wrong accommodation for the context.

For example, 72.7% of participants who received an alternate testing location accommodation found it to be effective; 27.3% did not. In a focus group discussion a participant explained why he did not find this accommodation to be effective. He shared his dismay and a feeling of isolation when leaving the classroom for testing. Although he did not express a feeling of dissatisfaction with his academic success while using the accommodation, his sense of belonging in the classroom with his peers was disrupted and, almost surprisingly, therefore rated the accommodation as ineffective. In other words, the DSS office provided an accommodation that met the definition of equal access under the law, but perhaps not the spirit of the law, when this aspect of student life was not

included in the accommodation selection process. Had the student's feelings of not belonging been a consideration in the accommodation selection process, a more satisfactory accommodation may have been provided. We wonder what barriers exist to providing accommodations in a more individualized manner with the spirit of the law in mind —perhaps a shift in philosophical position or creative ways to alleviate financial and logistical burdens are needed.

Another example emerged from the category called "access to academic information," which is unarguably the most important aspect of college. Successful students with and without disabilities are students that are able to receive the academic information they need in order to learn and graduate. For many students with disabilities, access to academic information requires effective accommodations and supports. Students in this study rated note-takers and extended time on tests the most effective accommodations they received in college, 87.5% and 85.7% effective, respectively. This finding is good news considering that these two particular accommodations are widely used by colleges and universities. However, there is an irony in what students said about these accommodations in focus groups. Participants overwhelmingly said that they thought more time or a note-taker was insufficient and better accommodations must be available. Specifically, they reported that note-takers often failed to show up, were not trained to take good notes, or their writing was impossible to read.

Some believed the DSS office elected to provide these accommodations because of their simplicity, ignoring the trade-offs between immediate and long-term costs and benefits as described by Smith (1993). EHP may further explain the discrepancy between survey and focus group results; that is, note-takers and extended time on tests may be effective accommodations in certain contexts, but not in all. Accommodations are frequently provided for a semester, or even an entire year, without regard for differences in the demands of a student's schedule or classes. Students themselves also do not realize they have the right to ask for a different accommodation or even to express the ineffectiveness or dissatisfaction with one provided to them. DSS offices might be able to remedy this problem by more student involvement in the accommodation process and follow-up with students throughout the semester.

Some participants raised issues that were larger than just the accommodation selection process. Independence is very important to college students, and students with disabilities are no exception. Participants in this study rated independence as the third most important factor in selecting an accommodation. Therefore it was not surprising to find that participants rated adaptive technology as 82% effective as an accommodation because adaptive/assistive technology, which can help an individual substitute for a human function (e.g., orthodics, prosthetics, and wheelchairs), is often the means to greater independence for individuals with disabilities. Various adaptive technologies have become more affordable and widely used than they were just a decade ago. They are easy to provide, albeit still more costly than some accommodations because of training and equipment costs; besides, technology is appealing— "sexy" and useful— to many people. However, in focus group discussions we found that equally important to gaining or maintaining independence were transportation, extracurricular activities, housing and accessible facilities. Many students were disheartened by their inability to participate fully in on-campus or off-campus student activities because of a lack of accessible transportation, housing or facilities.

The contrast between satisfaction with accommodations on a more personal, immediate level (e.g., adaptive technology) and the dissatisfaction with system-wide issues was stark. The large-scale nature of systemic change is more difficult to implement than more personal accommodations; however, if real, lasting change is to occur more universal design efforts are needed. Many colleges, universities and researchers across the country are developing and implementing innovative models as means to this end (e.g., Ohio State University, 2004; University of Kansas Center for Research on Learning, 2004; University of Maryland, 2004; University of Minnesota, 2004; University of Rhode Island, 2004; University of Washington, 2004). Such efforts to increase access to information, facilities and campus life are the first steps toward systemic change and universal access in postsecondary educational settings.

In retrospect, the students' survey responses and the focus group comments suggest numerous avenues for further research. For example, if we could construct a workable, rigorous research design that allowed for random selection of community college sites and the students within those sites, we could examine effects at multiple levels that could be attributed to the variations in state systems and local implementation. Such a design would more clearly explicate the institutional features associated with effective accommodations and student outcomes. Given the lack of an accessible database at the participating colleges, such a sampling plan and design was not feasible, however, college staff expressed their intent to have such capacity in the future.

Conclusion

Institutions that provide equal access by the letter of the law, (i.e., primarily to avoid lawsuits) exhibit a philosophy that may not be verbalized on a campus but is felt and observed, and ultimately, limits the success potential of a college and its students. Colleges that embrace the spirit of the law, on the other hand, are likely to invest in an accommodation process that considers the entire context of student life, individual functional needs, trade-offs between the immediate and long-term costs and benefits, and incorporates system wide universal design concepts. In so doing, we hypothesize that these colleges will reap the rewards of increased enrollments and a more diverse campus with new ways for more students with disabilities to be involved in activities and leadership roles.

Two important pieces of this complicated puzzle are the empowerment of students with disabilities and the education of others about disability. Although no accommodation can fix negative perceptions of students with disabilities, students themselves can be powerful change agents. Through self-determination and empowerment students with disabilities are the best leaders for the next changes to be made on college campuses. Listening to their experiences and involving them not only in the accommodation process, but also in the process for systemic change on the whole is advantageous and is likely to be highly effective.

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