Peer and Self-Perceptions of Learning Differences

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Peer and Self-Perceptions of Learning Differences

Empirical Research Honors Thesis

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Degree of Bachelor of Arts

By
Megan Lapp

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Abstract

Bates College currently defines learning differences as reading, writing, and math learning disorders; Attention Deficit/Hyperactivity Disorder; psychoemotional disorders; auditory, visual and sensory motor disorders; and temporary medical issues such as concussions. In order to explore peer and self-perceptions of learning differences at Bates, two studies were conducted. Study 1 consisted of two focus groups with students who have diagnosed learning differences and three focus groups with students who do not have diagnosed learning differences to gain an understanding of perceived stigma on campus, and whether some learning differences and accommodations are more legitimized than others. Analysis of the data using Grounded Theory Method resulted in three broad categories for participants with learning differences (language, peer and self-perceptions, and experiences with learning differences) and three broad categories for participants without learning differences (basic knowledge, experiences with learning differences, and peer perceptions). Study 2 aimed to systematically measure perceptions of learning differences by utilizing two Go/No-Go Association Tasks (GNATs) to test implicit bias. The affective GNAT tested whether participants associated learning differences with general positive words more than with general negative words or vice versa, while the evaluative GNAT followed the same format but used positive and negative terms related to competency. Participants showed a greater association between learning differences and negative terms than positive terms for both the evaluative GNAT, $t(109) = -2.77, p = .007$, and the affective GNAT, $t(109) = -6.18, p < .001$, demonstrating negative implicit bias against learning differences.
Peer and Self-Perceptions of Learning Differences

The number of students with learning differences who are pursuing higher education is on the rise in the United States. The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) identifies three categories of learning disorders: reading, writing and math (American Psychological Association, 2013). In addition to DSM-identified learning disorders, there are a large number of students with Attention Deficit Hyperactivity Disorder (ADHD) attending colleges and universities. According to the CIRP survey (Pryor et al., 2012), 5.1% of all first-year students attending baccalaureate institutions and 7.3% of first-year students at nonsectarian four-year colleges had ADHD in the fall of 2012. While the DSM-5 does not consider ADHD to be an official learning disorder, it is a learning difference recognized by schools at all levels of education (Individuals with Disabilities Education Act, 2006). As defined by Bates College, learning differences include learning disorders; ADD/ADHD; psychoemotional, auditory, visual and sensory motor disorders; and temporary medical issues such as concussions or physical injuries (H. Gurney, personal communication, September 9, 2014). Throughout the remainder of this study, “learning differences” will refer to the scope that Bates utilizes. “Learning disorders,” however, will refer to those defined by the DSM-5.

From 1983 to 2012, there has been an increase in learning disorders from 0.8% to 2.8% of all first-year college students in the United States. Furthermore, the rate for first-year students at private, nonsectarian four-year colleges has increased from 1.3% in 1983 (Astin et al., 1983) to 5.3% in 2012 (Pryor et al., 2012). As the number of students with learning differences increases, it is important to gain a better understanding of their experiences in college and university settings.
Perceived Stigma Against Learning Differences

There is evidence for negative peer and self-perceptions of learning differences beginning in elementary school students. In a longitudinal study of 46 boys from grades three to five, Bear, Juvonen and McInerney (1993) found that while self-perceptions in terms of social competence were comparable for boys with and without learning disorders, boys with learning disorders had lower self-perceptions of their academic competence than their counterparts who did not have learning disorders. Through their interviews with six elementary school students with learning disorders, Meaden and Halle (2004) found that the students all had positive thoughts towards the resource room at their school, while they all had negative thoughts in regards to their own disabilities and other kids’ actions towards them. It is therefore evident that from a young age, students with learning differences are exposed to negative discourse around their differences and perceive negative thoughts and actions committed by their peers who do not have learning differences.

To expand on research previously conducted on peer perceptions and relations, Bellanca and Pote (2013) used vignettes describing different disorders in order to determine peer perceptions of 273 elementary school students in the United Kingdom. They found that children were more likely to want to be socially close to a “normal” child than a child who had ADHD, depression, or a learning disorder. This shows evidence for social discomfort but is not a systematic measure of explicit stigma. Additionally, negative peer perceptions of children with disorders extend beyond social ties. Even though a greater proportion of students with learning differences were socially rejected than the proportion of students without learning differences, Coleman and Minett (1993) found that when comparing elementary school students of equivalent social status, the distinctions between students with and without learning differences reside in the
academic domain to a greater extent than in the social domain. The researchers believe that their results suggest that individuals with learning difference can succeed socially even though students with learning differences may be socially less competent than students without learning differences. In a study of 141 elementary school students in the United States, Haager and Vaughn (1995) determined that students with learning disorders \( (N = 44) \) and low achieving students \( (N = 44) \) were generally less socially competent than the students with average to high achievement status \( (N = 53) \). While parents did not confirm the social skills problems for low achieving students and students with learning disorders identified by teachers when they completed the Social Skills Rating Scale for Parents, those two groups of students were less well accepted by their peers. That said, social self-perceptions did not differ between the three groups of students.

As the number of students with learning differences pursuing higher education increases, it is also important to understand how college students are perceived by their peers and how those perceptions affect their own self-perceptions. Generally speaking, students in higher education are aware of negative stereotypes around learning differences. In an open-ended survey conducted at public universities in the United States, May and Stone (2010) asked 138 undergraduate students about metastereotypes regarding individuals with learning disorders. The researchers found six main categories to group classifications of responses to the question, “What do you think people in general believe about individuals with learning disabilities?” The first category of responses was “low intelligence,” in which 42% of respondents suggested that people with learning disorders are perceived as less intelligent than the average individual. The second category, “compensation possible,” (11.6% of respondents) referred to the idea that individuals with learning disorders are perceived as learning more slowly, but extra time or other
accommodations can make them as capable as the average individual. The third category was “processing deficit,” which refers to the 10.1% of responses that indicated individuals with learning disorders are perceived as having difficulties, often speed-related, with learning and processing. The “nonspecific insurmountable condition” category refers to the 16.7% of responses that expressed the sentiment that people with learning disorders are perceived as deserving of sympathy or pity since nothing can really be done to help them. There was also a category referred to as “working the system,” which was comprised of the 7.2% of responses suggesting that students with learning disorders are perceived as knowing someone, or being able to pay someone, who can give the learning disorder diagnosis, and that students with learning disorders simply want the accommodations that would assist anyone willing to work the system. Finally, there was an “other” category for the 12.3% responses that could not be categorized under any of the six options listed above (May & Stone, 2010, p. 489).

Of May and Stone’s (2010) 138 respondents, 38 with learning disorders and 100 without, the most frequent metastereotype reported overall was that students with learning disorders have low ability in academic settings. Whether students without learning differences actually believe that individuals with learning disorders can be classified as “low ability” individuals is unclear because participants were not asked directly about their own thoughts. One potential future direction for this research would be to ask students directly about their own attitudes—rather than their perception of general beliefs—to get a better understanding of the real stereotypes that may be in play on college campuses. If attitudes are positive, then students with learning differences could benefit from knowledge about the lack of real stigma. Alternatively, if attitudes are negative, then steps could be taken to intervene.
Negative attitudes related to learning differences may in fact be mostly related to accommodations. Denhart (2008) conducted interviews with 11 college students who had learning disorders and discovered a number of issues in terms of how these individuals interacted with professors and other students. Related to negative stereotypes was Denhart’s finding that students were avoiding using their legally mandated accommodations in fear of stigma and being misunderstood as cheating by their peers or professors. Furthermore, students with learning disorders often perceived that they were spending much more time on assignments than their peers, while self-understanding and learning disorder community groups were helpful traits and resources, respectively, for promoting academic and social success. While Mortimore (2013) reported that she found “no resentment of extra support” (Mortimore, 2013, p. 46), she was more focused on the impacts of full inclusivity on an institutional level and her materials were not designed to address stigma specifically. Additionally, out of Mortimore’s 247 participants, there were no students with disclosed learning differences who responded to the survey. While we do not know the motivations behind their lack of participation, that could point back to the fear of stigma and perceived resentment about accommodations even if there is not a high level of resentment in reality, since perceived resentment and stigma still have strong effects on social interactions.

**Stereotype Threat & Its Effects on Performance**

There are many different forms of stigma, including stigma that is perceived and enacted. Major and O’Brien (2005) note that “stigma is relationship- and context-specific; it does not reside in the person but in a social context” (Major & O’Brien, 2005, p. 395). As a result, psychologists have examined stigma and stereotype threat in a number of different domains.
Steele and Aronson (1995) first examined stereotype threat in relation to the intellectual performance of African Americans. They conceptualized stereotype threat as the idea that in situations where a negative stereotype about a group is applicable, a member of that group “is at risk of confirming it as a self-characterization, both to one’s self and to others who know the stereotype” (Steele & Aronson, 1995, p. 808), which can have detrimental effects on performance. They found that Black participants in the stereotype-threat condition spent more time doing fewer problems more inaccurately than Black participants in the nondiagnostic condition or White participants in either condition, which shows that lower expectations can in fact hurt performance by undermining stereotype threatened individuals’ motivation and effort. It was hypothesized that stereotype threatened Black participants might have spent more time on fewer, less accurate problems than the other participants because they had to spend attentional resources on both the presented problems and the self-significance of their frustration.

Steele (1997) extended his 1995 work by further investigating the mechanisms behind the negative effects stereotype threat have on performance. He emphasized the importance of situational factors when it comes to the relevance of a stereotype, and therefore stereotype threat. While negative stereotypes were previously deemed threatening only if they were considered self-relevant, Steele argued that stereotype threat was actually situational and “is cued by the mere recognition that a negative group stereotype could apply to oneself in a given situation” (Steele, 1997, p. 617). This distinction means that an individual does not necessarily need to internalize or self-identify with a negative stereotype in order for it to have detrimental effects on his or her performance.

Since stereotype threat had been shown to negatively affect women’s math performance similar to the way in which stereotype threat negatively affected African Americans’ intellectual
performance, Boucher, Rydell, Van Loo, and Rydell (2011) examined the effects of introducing and removing stereotype threat on learning. In their study with 200 undergraduate students, Boucher et al. employed four conditions: control, stereotype threat only, stereotype threat removed by “gender fair” information before learning, and stereotype threat removed by “gender fair” information after learning. They found that women subject to stereotype threat during learning were unable to adequately learn the rules of the focal task, rendering them unable to transfer the rules to a second, related task. These results show that stereotype threat can have a negative impact not only on initial performance, but extend to ultimately have negative impacts on subsequent tasks. Boucher et al. therefore suggest that the best time to intervene to combat stereotype threat in learning situations is before the learning occurs so the information can be effectively coded in memory and accessible for subsequent, related tasks. In the context of learning differences at Bates, professors often bring up learning differences and accommodations at the beginning of the semester when handing out syllabi. Reframing those reminders to include disclaimers about equal intelligence at the beginning of the semester might be comparable to providing gender-fair information before learning takes place.

While stereotype threat can affect learning and subsequent performance, it can also affect intentions to improve. Fogliati and Bussey (2013) conducted an experiment with Australian undergraduate students to examine the intersection of stereotype threat, performance, feedback, and intentions to improve performance. They found that women in the stereotype condition performed significantly worse than women in the non-stereotype condition and all men, and that women who received negative feedback were significantly less likely to report attending a tutorial that would provide mathematic assistance. Collectively, Boucher et al. (2011) and
Fogliati and Bussey have shown that stereotype threat can hinder learning, subsequent performance, and intentions to improve in threatened domains.

Stereotype threat is not only context specific, but can be triggered by stimuli that should not be inherently negative. Wister, Stubbs, and Shipman (2013) examined how mentioning menstruation to women, for example, affected performance on cognitive tasks. They found that women in the menstruation threat conditions scored significantly lower on the Stroop (a cognitive task) than women in the conditions that did not include menstruation threat. The menstruation threat conditions included a six-item menstruation history questionnaire, which brought menstruation to mind for the women in those conditions, but did not include any information suggesting that menstruation was viewed negatively or would have negative impacts on cognitive performance. Wister et al. concluded that providing some basic information about their menstrual cycles can serve as menstruation threat for women, which further demonstrates how stereotype threat is context-specific and does not need to include a stimulus that is inherently negative or threatening.

While stereotype threat provides insight for understanding stigmatized groups, there has been no research directly related to stereotype threat and learning differences. Fogliati and Bussey (2013) argue that their study in Australia shows that stereotype threat is applicable not only to a number of performance domains but also cross culturally. This generalizability is a key component for considering the ways in which stereotype threat can be conceptualized and applied to learning differences in higher education. Fogliati and Bussey noted that stereotype threat appears to have the greatest effect on performance for individuals who are highly engaged with the relevant performance domain. Furthermore, Major & O’Brien (2005) suggest that targets of negative stereotypes experience threat when they evaluate a situation as demanding
greater resources than they can offer. Together, those concepts are relevant for learning
differences since negative stereotypes about learning differences are directly related to the
performance domains of learning and cognitive performance. Furthermore, “resources” in an
academic setting could include individual ability to perform, and external resources and
accommodations that may help students with learning differences. Stereotype threat for
individuals with learning differences could therefore apply to attitudes towards individuals with
learning differences, specific learning differences themselves, or accommodations.

In response to the body of work conducted on the social psychology of stigma, Major and
O’Brien (2005) developed the identity threat model of stigma. They proposed that identity threat
leads to both involuntary stress responses and voluntary attempts at threat reduction. The
involuntary responses might manifest as anxiety or vigilance to threat, and the incorporation of
involuntary responses in the identity threat model points to the harm of negative stereotypes and
identity threat at face value. These negative involuntary responses can motivate attempts at threat
reduction, which can take on the form of identifying oneself more closely with the threatened
group or disengaging from the domain relevant to the negative stereotype. Active coping
strategies can be beneficial when serving as a buffer to stigma, but harmful when stereotype
internalization or disengagement result. When it comes to group identification, Major and
O’Brien point out that groups can offer different forms of support—emotional, informational,
and instrumental—as well as provide individuals with a sense of belonging. The positive
correlation between group identification and self-esteem for stigmatized individuals is something
that may not be accessible for all groups that are targets of negative stereotypes, though.
Concealed stigmas—which would apply to learning differences—make in-group comparisons
difficult because in-group identification may not be possible to begin with (Crocker & Major,
While group identification may not be possible for individuals with learning differences in higher education, disengagement from the relevant domain (academics in this case) is a possibility and would potentially be detrimental to academic performance.

At Bates College, there are no formal peer support networks for students with learning differences (H. Gurney, personal communication, September 9, 2014) nor are learning differences necessarily apparent or, therefore, group-identifiable. Group membership has direct benefits for self-esteem through various forms of support and a sense belonging (Major & O’Brien, 2005). Regardless of in-group identification or lack thereof, individuals with learning differences are subject to stigma and negative stereotypes as members of an ability-stigmatized group. Major and O’Brien (2005) note that stereotype threatening conditions for ability-stigmatized groups can include “taking an ability diagnostic test, being outnumbered by members of nonstigmatized groups, being taught by an instructor who is a member of a dominant outgroup, being exposed to media images that reinforce negative stereotypes of one’s group…[or] being asked to reveal a concealable stigma” (p. 400). All of those potentially threatening situations are plausible and probable for students with learning differences, which shows the relevance of examining stereotypes—both perceived and actual—in the context of learning differences in higher education. Ultimately, although stigma is socially bound, its effects are real and detrimental to individuals in many different domains.

**Implications of Negative Stereotypes**

Perceptions of stigma on personal and public levels can interact to affect major decisions, such as whether or not to seek mental health treatment. For students with learning differences, a similar phenomenon has been evidenced by Denhart’s (2008) finding that some avoid using their
legally mandated accommodations in fear of stigma and being misunderstood as cheating by their peers or professors. Through their investigation of the effects of stigma on deciding to pursue mental health treatment, Pedersen and Paves (2014) defined perceived public stigma as how an individual believes others would view and treat them if they sought treatment, and personal stigma as how an individual would actually view and treat others who seek treatment. They reported that approximately one out of three people forego treatment they perceive as necessary out of fear of stigma. However, Pedersen and Paves found that three out of four participants reported that they would not treat a peer differently if he or she sought mental health treatment. This disconnect between how individuals believe others would treat them and how others may actually view and treat them shows that participants endorsed higher levels of perceived public stigma than personal stigma. While there may be a perceived public stigma for learning differences and accommodations in higher education (May & Stone, 2010), personal stigma for utilizing accommodations, for example, has not yet been systematically measured.

Intentions and beliefs do not always correspond directly to actions. While Pedersen and Paves (2014) compared perceived public stigma and personal stigma as reported by participants, Kleck and Strenta (1980) looked at the disjuncture between perceived and actual threat as reported and acted out, respectively. After conducting a number of studies on the perceptual biases relevant to negatively valued physical characteristics and social interactions, Kleck and Strenta concluded that people perceive their physical characteristics to have a greater impact on interactants’ behavior when the characteristics are deemed negative (such as epilepsy or a facial scar) than when they are considered neutral (such as an allergy). Furthermore, Kleck and Strenta believe that there is a perceptual bias in play, not a self-fulfilling prophecy. In other words, participants who were told the interactant knew of a negatively valued characteristic perceived
the interactants to be acting negatively towards them even though third-party observers who were unaware of the study’s intentions did not report actual behavioral changes.

When it comes to actual behavioral changes, stigma can also negatively impact mental well-being and engagement with treatment. For the purposes of their study, Owen, Thomas, and Rodolfa (2013) defined public stigma as perceived stigma for seeking mental health treatment from others generally in society, social stigma as fear of judgment from others in their social network for seeking mental health treatment, and self-stigma as the internalization of broader societal messages related to seeking mental health treatment. Owen et al. found that for individuals engaging in therapy, self-stigma and social stigma were negatively correlated with overall psychological well-being. Furthermore, clients who were high in self-stigma were less engaged in therapy in a meaningful and purposeful manner than clients low in self-stigma. This shows that individuals may not only avoid treatment for fear of stigma, but may have an impaired working alliance with their therapists once there if they have greatly internalized that same stigma. In an academic setting, accommodations for students with learning differences are analogous to—and may literally be—mental health treatment for individuals with psychiatric disorders. If students are fearful of using, or reluctant to use, the accommodations that could make a positive impact on their academic performance (as Denhart (2008) found), it is possible that the fear of stigma will keep them from benefitting fully in academic and emotional realms.

Buffers to Stigma and Protecting Self-Esteem

Buffering against the internalization of negative stereotypes is important for mental well-being and self-esteem. Vogel, Bitman, Hammer and Wade (2013) were interested in the directional relationship between public stigma (stigmatizing perception endorsed by the general
public) and self-stigma (reduced individual self-esteem because of the perception that one is socially unacceptable). Through their longitudinal study, Vogel et al. found that high initial public stigma predicted high subsequent self-stigma but not the other way around, meaning public stigma has a greater influence on future self-stigma than the reverse. This finding suggests that public stigma is, in fact, internalized by individuals who are targeted by negative stereotypes. Perceived stigma against learning differences, therefore, could lead to internalization of the associated negative stereotypes even in the absence of intentionally enacted stigma.

Similar to how stigma is context- and relationship-specific, self-esteem also varies based on social context and situational forces (Crocker & Major, 1989). Crocker and Major (1989) differentiated between global self-confidence (appraisal of one’s own skills) and collective self-esteem (appraisal of social group value). They found that individuals can have personal discrepancies between the two, such as high global self-esteem but low collective self-esteem. While stigma is often regarded as negative, Crocker and Major argue that there may be some self-protective properties resulting from social stigma. An efficacy-based self-esteem view would suggest that overall, individuals who are members of stigmatized groups should have lower self-esteem than non-stigmatized individuals because they have less control over their environments. That is not to say, however, that stigmatized individuals have no control over their environments or over their self-esteem. For example, accommodations and various forms of support provide tangible control over learning environments in educational settings for students with learning differences. Crocker and Major suggest that stigmatized individuals’ self-esteem may be protected through three mechanisms: attributing negative feedback to prejudice against the group they are a member of; selectively comparing their performance to ingroup members’ performance; and selectively valuing attributes on which their ingroup typically excels while
selectively devaluing attributes with which their ingroup may struggle. While these protective measures related to stigma may mediate self-esteem for individuals targeted by negative stereotypes, Crocker and Major note that negative stereotypes can still be psychologically damaging, especially if internalized.

In addition to the mechanisms people may employ to protect self-esteem, stigmatized individuals can also use diagnostic models to moderate stigma. For example, Schreiber and Hartrick (2002) interviewed women being treated for depression in Canada to examine how they used the biomedical explanatory model to manage the stigma of depression. The women reported experiencing both enacted stigma (episodes of discrimination or judgment against them based on their depression) and felt stigma (internal shame associated with depression and fear of being the target of enacted stigma). Schreiber and Hartrick concluded that by explaining their depression as a biochemical or genetic disorder, and therefore adopting the biomedical explanatory model of depression, women managed to create a personal buffer to felt stigma, even though enacted stigma was still very much present and recognized as such. This study shows that stigma can be acknowledged and managed in order to buffer against internalization of the negative stereotypes associated with the stigmatized condition.

Although there can be self-protective measures that result from recognizing and even accepting negative stereotypes, internalizing that stigma may be detrimental. Burkley and Blanton (2009) say that “self-stereotyping is analogous to comfort food—it may alleviate immediate discomfort, but over time, the cumulative effects can be detrimental” (Burkley & Blanton, 2009, p. 296). The alleviation of immediate discomfort refers to the practice of targeted individuals shifting the blame for personal shortcomings on group characteristics, yet the detrimental cumulative effects refer to decreased self-esteem that can negatively impact
subsequent performance and relationships. Since there is a perceived stigma against learning
differences in higher education (May & Stone, 2010), internalization of that stigma and
decreases in self-esteem are possible outcomes. Stigma can be detrimental to individuals for a
number of reasons, and potentially a result of a lack of knowledge and misunderstanding.

Misunderstanding and Lack of Knowledge of Learning Differences

Although the percentage of students with documented learning differences at colleges
and universities is rising, there appears to be a lack of education and information surrounding the
definitions, accommodations and experiences related to students with learning differences.
Mortimore (2013) found that the majority of university students and professors reported a level 2
out of 4 in regards to their knowledge of dyslexia (a specific learning disorder), where 1
indicated no knowledge, and 4 indicated expertise. Furthermore, she found that most students
had received their knowledge of the disorder through peers and the media. When asked to define
dyslexia, students without learning disorders most often focused on the negative discourse rather
than strengths dyslexic individuals may have.

Learning differences appear to be misunderstood even by well-intentioned psychologists.
Sparks and Lovett (2009) conducted a meta-analysis of peer-reviewed, empirical studies
conducted on topics related to college students with learning disorders. They found that there
was no significant difference in IQ scores between college students with and without learning
disorders, which the authors thought might be problematic. They concluded that there is a
possibility that “the [learning disorder] label obscures the real problem by encouraging the
student to take advantage of disability accommodations rather than remediating the academic
skills deficits or considering less academic pathways after high school” (p. 507), since students
with lower IQ scores without learning disorder labels will not receive the same “advantages” as those with learning disorder classifications (Sparks & Lovett, 2009). Those conclusions are, however, ignorant of the definitions of learning disorders which apply only to individuals who have average or above average IQ scores, and who demonstrate discrepancies between IQ and achievement (American Psychological Association, 2013). This shows that even in the realm of psychology research, there is a gap between dissemination of information and insight.

In order to better understand learning disorder documentation in higher education, Sparks and Lovett (2014) reviewed information submitted by 210 college students receiving services for students with disabilities. They believed that the findings demonstrated a basic misunderstanding of diagnostic criteria. More specifically, and relevant for this study, they found that there was a lack of consistency in terms of testing and documentation. If professionals adhere to slight variations of diagnostic criteria and schools have different requirements and suggestions for documentation than one another, it comes as no surprise that there is a lack of consistency in knowledge and understanding of learning differences, as Mortimore (2013) found. Mortimore also found that many students reported that they wanted to help and make themselves academically available to students with dyslexia, but that they did not know how to go about helping without disempowering their peers. One example of this phenomenon was students indicating that they would not want to offer unsolicited help in fear of offending students with dyslexia. This exemplifies both the harm of an overall lack of information about what learning differences are and how to best support students with differences on a peer-to-peer level, and how much of an opportunity exists to catalyze and continue important conversations on how to approach these issues. Collectively, this information suggests that there may be an opportunity
for educational programming to be developed to help better inform all students and to specifically support those with learning differences.

Misunderstanding of learning differences can have detrimental effects for those students in need support. Beilke and Yssel (1999) examined the “chilly,” unwelcoming academic climate for students with disabilities and found that there were two paths for these students with the odds stacked against them: students with learning disorders either put in an immense amount of effort to defy the odds and surpass expectations, or they suffered from a self-fulfilling prophecy in which no one believed in them and they ultimately struggled. The researchers attributed the lack of helpful faculty support to a general misunderstanding. When it comes to academic performance for students pursuing higher education, both academic and social environments can have important and measurable impacts on a student’s ability to excel.

*Context Specific to Bates College*

According to Holly Gurney, Associate Dean of Students at Bates College who is in charge of support and resources for students with disabilities, Bates College’s rate of students eligible for learning difference accommodations has held steady at 10-13% over the past 15 years. Bates offers a range of accommodations for students with adequate documentation, the most common of which are extended test time, note takers, note taking assistants, assistive reading technology, tutoring, various forms of counseling, and auditory and visual disability equipment. There is an emphasis on creating individualized plans for each student, so there are no absolutes in terms of what students with learning differences will or will not receive (H. Gurney, personal communication, September 9, 2014).
The fear of stigma and stereotyping discussed previously (Denhart, 2008) is a phenomenon that Dean Gurney recognized as something that some students who receive accommodations at Bates are fearful of as well (H. Gurney, personal communication, September 9, 2014). Although there is strong upper-level administrative support for students with learning differences in place at Bates College, Dean Gurney believes that many students with learning differences who are eligible for accommodations arrive at Bates College with a “wall” already built up from years of coping with their learning difference and fear or threat of stigma from their peers prior to college. Even if real—or intentionally enacted—stigma against students with learning differences does not exist at Bates, it may be difficult for students with learning differences to immediately dismiss a fear of stigma, especially if there are not open conversations on campus about these topics. Dean Gurney did report that conversations around creating fully accessible and inclusive institutions are gaining momentum in the world of higher education and at Bates College, with the ultimate goal being academic environments that do not actually necessitate accommodations because they are designed such that all students can learn in the best, individualized way. She also recognized that those are long term, idealistic goals that would require a massive undertaking in many capacities (H. Gurney, personal communication, September 9, 2014).

There is empirical support for promoting full inclusivity to benefit students with learning differences. One avenue for combatting negative attitudes towards individuals with learning differences is through the academic structure established by professors to aid those students. Quinlan, Bates and Angell (2012) asked 10 university students with learning disorders about the accommodations provided by their professors and found three levels of support. The least helpful for students were professors that were non-accommodating, refusing to acknowledge students’
disorders and the help they might need. The middle ground was when professors met legal requirements, pointing students in the direction of resources provided by the university, but not going above and beyond to establish an accommodating environment. Finally, the situation perceived to be best for all students was referred to as full inclusivity—an academic environment ideally designed to eliminate the need for formal accommodations by tailoring to many different learning styles. Since all students learn differently and professors are primarily responsible for setting the tone for the academic environment, full inclusivity was helpful for all by alienating none. For the purposes of this study, it is helpful to consider the concepts of full inclusivity in regards to social relations within an academic environment built by students themselves. In that sense, peer perceptions and interactions are critical to understand in order to establish an environment that is welcoming and supportive of all students on multiple levels, regardless of their learning difference status.

The Current Study

Since it has been found that there are perceived stereotypes and stigma against learning differences (e.g. Denhart, 2008; May & Stone, 2010) and that stereotypes are harmful (e.g. Steele & Aronson, 1995), there is a need to determine whether these stereotypes and negative stigma actually do exist among college students. The majority of prior research directly addressing peer perceptions of students with learning differences has been conducted with elementary school students. In contrast, the majority of research conducted in regards to students with learning differences in higher education has focused on how they interact with and are perceived by professors. While Mortimore (2013) employed a questionnaire to examine knowledge of specific learning disorders and May and Stone (2010) asked college students about perceived stereotypes
towards individuals with learning differences in an open-ended format, there has not yet been a study conducted to systematically measure levels of stigma and perceived stereotypes in regards to students with learning differences.

Unlike elementary school students who primarily make friends through their school classes, college students live in close quarters and have a vast number of interactions with each other outside of class time. There is, therefore, ample opportunity for college students to form social relations outside of an academic context. This would suggest that in a purely social context, learning differences could easily be hidden, either intentionally or by omission, making the social context a more equal playing field than in elementary school. For example, a college student might not know that their residence hall mate has a learning difference unless they have a class together and the hall mate takes their exams outside the usual classroom. In an academic setting where students with learning disorders may be picking up notes from a classmate or leaving the room for exams, learning differences may be more at the forefront of an individual’s identity than in a purely social setting, whether that is perceived by the individual, their peers, or both. For these reasons, the current study will focus on peer perceptions of learning differences and social relations in academic settings.

Two studies will be undertaken to evaluate peer and self-perceptions of learning differences in higher education. Study 1 will consist of focus groups with students who have learning differences and, separately, students who do not have learning differences. By conducting focus groups, the study aims to better understand the ways in which students think about learning differences and accommodations. For students without learning differences, one of the main goals will be to determine if and how they differentiate between various learning differences, which may provide insight into knowledge and understanding of learning differences.
Focus groups with students who have learning differences will include questions about the general environment for them on campus, and how they could best be supported. All focus groups will include questions about perceived stigma on campus, whether some learning differences are more legitimized than others, and whether some accommodations are more legitimized than others. It is predicted that participants will bring up perceived stigma of learning differences, but that explicit mentions of such are less likely. Study 1 therefore aims to confirm whether there is perceived stigma against learning differences, to determine whether that stigma really does exist, and to understand how perceived negative stereotypes impact students with learning differences. Study 2 will focus on developing and implementing a more systematic measure of stigma against learning differences.
Study 1 Method

Participants

Participants were recruited via email to participate in focus groups. Emails were sent to the general population of Bates College via the Announce Listserv, and sent specifically to students enrolled in the Principles of Psychology (Psych. 101) course, offering 0.5 participation credits. For the specific recruitment text, see Appendix A. Thirty individuals participated in this study. Out of the 30 participants, there was a range in age from 18 to 22 years. The mean age was 19.47 years and the standard deviation in years for the sample was 1.25. There were 20 participants who identified as women and 10 who identified as men. Of the 30 participants, 21 individuals (67.7%) identified as Caucasian/European-American/White, four individuals (12.9%) identified as Asian/Asian-American, and the remaining five individuals (19.4%) identified as Black/African-American, Multi-Ethnic/Multiracial, or Hispanic/Latino/Latina. There were two focus groups with students who had learning differences, with an average of five participants per focus group and a total of 10 participants (seven women, three men) with diagnosed learning differences. There were three focus groups with students who did not have learning differences, with an average of 6.67 participants per focus group and a total of 20 participants (13 women, seven men) without diagnosed learning differences.

Materials

Data were collected for this study through focus groups. Participants were split based on whether or not they had learning differences, and were asked up to 12 questions regarding their thoughts on issues related to learning differences at Bates. Participants were asked to respond freely to these questions, such as, “What comes to mind when you hear the terms ‘learning
differences,’ ‘learning disorders,’ or ‘learning disabilities’?” “Do you think some learning differences are legitimized or delegitimized more than others?” and, “How do you think accommodations for learning differences are perceived at Bates?” For a full list of focus group questions, see Appendix B.

Procedure

Before the focus groups were conducted, the study was approved by the Institutional Review Board of Bates College. For this study, five different focus groups were conducted by the primary researcher and were digitally recorded.

Participants were given consent forms (see Appendix C) and asked to fill out anonymous demographics forms indicating their learning difference status, gender, class year, ethnicity, knowledge of learning differences, and age (see Appendix D). The researcher asked questions relating to perceptions of learning differences and accommodations at Bates College. Participants were asked to not repeat information discussed in the focus group with people outside of the current focus group in order to protect confidentiality.

At the end of the study, participants were provided with a sheet thanking them for their participation. The debriefing sheet (see Appendix E) provided contact information for the primary researcher, the thesis advisor, the Psychology department chair, and the Bates College Health Center as support resources, in case the conversations during focus groups made participants feel as though they wanted to talk to a professional about themselves or someone they know. In order to maintain confidentiality, no identifying information about participants was collected and there was no way to connect an individual’s response to their personal identity.
Data Analysis

The data were analyzed according to Grounded Theory Method. Grounded theory refers to the practice of deriving a theory from data that are systematically gathered and analyzed, so the theory is developed from the data and not the other way around (Strauss & Corbin, 1998). After the focus group recordings were all transcribed, the process of open coding began. Open coding consisted of going through the transcripts by hand, highlighting and making notes about the terms and phrases spoken by participants. The coding process for focus groups consisting of participants with learning differences was kept separate from the coding process for focus groups consisting of participants without learning differences. After the open codes were compared, they were classified based on similarities into subcategories such as “language used,” “knowledge of learning differences,” and “misunderstanding of learning differences.” Subcategories were ultimately grouped into categories, three for participants with learning differences and three for participants without learning differences.
Study 1 Results

The focus groups were not set to run for a specific time, so a two-sample t-test for independent groups was conducted to compare the mean length in seconds of focus groups between individuals who had diagnosed learning differences and individuals who did not have learning differences. Focus groups with participants who had learning differences were significantly longer ($M = 1668.50, \text{SD} = 383.96$) than focus groups with participants who did not have learning differences ($M = 957.33, \text{SD} = 124.10$), $t(3) = 3.20, p < .05$.

A one-sample t-test was conducted to compare the reported average knowledge of learning differences from participants at Bates College to the reported average knowledge of learning differences from the student participants in Mortimore’s (2013) study. Results indicated that the mean knowledge for Bates students ($M = 2.27, \text{SD} = .52$) was marginally significantly higher than the average of Mortimore’s participants ($M = 2.10$), $t(29) = 1.75, p = .09$. In addition, a two-sample t-test for independent groups was conducted to compare the mean knowledge of learning differences on a scale from one to four between individuals who have diagnosed learning differences ($M = 2.30, \text{SD} = 0.48$) and individuals who do not have learning differences ($M = 2.25, \text{SD} = 0.55$), but there was no significant difference.

Based on observations during the focus groups, it seemed as though there might be differences in how participants refer to themselves and others. A frequency analysis of pronoun use was conducted to examine how participants with and without learning differences referred to themselves and others (see Table 1). Participants without learning differences most frequently referred to individuals with learning differences as “they” or “them” (35.09%), and most frequently referred to individuals without learning differences as “people” (50.00%). Participants with learning difference most frequently referred to individuals with learning differences as
“you” (43.53%) and most frequently referred to individuals without learning differences as “people” (31.97%).

In addition, since it seemed as though participants with learning differences more openly talked about their personal experiences, feelings, and beliefs than participants without learning differences, a two-sample t-test for independent groups was conducted to compare the mean number of times the term “I” was used between focus group with individuals who have learning differences and focus groups with individuals who do not have learning differences. Focus groups with participants who have learning differences had a significantly higher average use of the term “I” ($M = 239.5$, $SD = 95.46$) than focus groups with participants who do not have learning differences ($M = 55.33$, $SD = 4.04$), $t(3) = 184.17$, $p = .035$.

Analysis of the data using Grounded Theory Method resulted in three broad categories for participants with learning differences (see Table 2)—language, peer and self-perceptions, and experiences with learning differences—and three broad categories for participants without learning differences (see Table 3)—basic knowledge, experiences with learning differences, and peer perceptions.

**LD Participants—Language**

The first category for participants with learning differences, language, refers to both the distinctions and preferences between different terminology and the actual language subsequently used by participants during the focus groups. When asked about thoughts pertaining to learning differences, learning disorders, or learning disabilities, participants felt the three terms had different connotations. Participants noted that the term “disability” has a more serious connotation and can imply both an inability to learn and lower intelligence. “Difference,”
PEER & SELF-PERCEPTIONS OF LEARNING DIFFERENCES

however, was seen as having less negative connotations than “disability” or “disorder,” and was the preferred term by participants who indicated a preference for one over another. One participant offered the explanation that the term “disability” applies “when you don’t know you have it and you go on with life basically with a hand behind your back until you get treated. Either you go on medication or you just get extended time or whatever treatment works for you, and then it’s a difference.” The idea that a disability becomes a difference once a diagnosis and treatment or accommodations come into play, was met with enthusiasm by other participants who had never heard that explanation before.

Although participants advocated a preference for “difference,” they used the term “learning disability” more often (55.56%) than the term “learning difference” (27.78%) during focus groups when referring to themselves or others with learning differences.

**LD Participants—Peer and Self-Perceptions**

The second category for participants with learning differences, peer and self-perceptions, encompasses how participants perceive their peers, how participants perceive and describe themselves, and how participants think they are perceived by their peers and other adults in their lives.

Participants reported viewing their peers as able to move much more quickly in terms of academics. They felt as though some of their peers were able to do work so quickly “it doesn’t even make sense,” and that in class it might feel as though “everyone is moving faster.”

Alternatively, participants discussed occurrences of their peers attempting to acquire accommodations and medication that they do not need. In addition to perceiving that people try to get “fake diagnoses” so they can get extra time for exams or get ADHD medication,
participants seemed concerned at the lack of knowledge those people have about what ADHD medication really does. Participants reported knowing people who “take Adderall to get work done,” but that their peers “don’t realize Adderall isn’t a super drug that will make you instantly focus.” One participant vocalized his frustration saying, “[Adderall] is powerful and they treat it like toys…they don’t realize the side effects.”

In terms of self-perceptions and assertions, participants described the difficulties that comprise their learning differences, the effort they put in to their academics, and also asserted their normalcy in comparison to their peers. The most common difficulties that participants described were the simultaneous need for focus and the tendency to get bogged down in the little details, as well as needing to move at a slower pace than their peers. One participant talked about “endless thought loops,” one talked about “focusing on every little detail,” and yet another stated that “you overthink everything” when using ADHD medication. The phrases “I can’t” and “I wish I could” were commonplace in terms of describing what constitutes their specific learning differences and personal experiences, rather than simply stating the diagnostic label they may have. On a similar note, many participants reported being slower and taking longer to read, write, and comprehend academic materials than their peers. Despite their difficulties, participants with learning differences made assertions such as, “we’re all smart individuals” and “we’re not incapable of learning,” which address their own self-perceptions.

Participants with learning differences differentiated between feeling personally misunderstood and having their accommodations misunderstood by their peers. They perceived that accommodations were seen as “unfair,” “not needed,” and “not understood” by peers who were “very jealous.” Those negative views are similar to a “working the system mentality” (May and Stone, 2010), which was expressed by two participants who reported that their peers viewed
them as lazy. Alternatively, two other participants felt as though they were misunderstood as “overachieving” and seen as “perfectionists” for all of the effort they have to put into their academic workload. Regardless of whether the valence of misunderstanding can be viewed as positive or negative, the overwhelming majority of comments in regards to how participants believe they are perceived by their peers were related to the idea that “they don’t understand.”

To further explore how participants reported feeling perceived by their peers, it is important to note that specifics in terms of diagnosis labels and accommodations are important and result in different perceptions. One participant pointed out early on that “people treat [different learning differences] differently” and give them “different validity.” Specifically, participants felt that dyslexia and medication for depression were perceived as legitimized but that ADHD and ADHD medication were perceived to be delegitimized by their peers without learning differences. An explanation given for the legitimation of dyslexia was, “spelling ‘definitely’ wrong is very clear”, so “if you’re able to explain [your learning difference] well, it’s easier for them to understand.” Yet being asked for ADHD medication made that medication feel more delegitimized than depression medication, for example, which is “never asked for.” One participant described misunderstanding by saying, “not being able to see themselves as having that problem affects their ability to understand where you’re coming from.”

Out of 35 references to specific learning differences, 12 named ADD/ADHD and 13 named dyslexia. These specific mentions of learning differences were either in reference to personal diagnoses, were diagnoses that came to mind as most relevant, or were given as examples when participants were talking about learning differences in general.
LD Participants—Experiences with Learning Differences

The third category for participants with learning differences, experiences with learning differences, includes how participants addressed their own learning differences, learning difference salience, and past versus current experiences with learning differences.

Regardless of feeling misunderstood by their peers, many participants stated that they are “more comfortable with their peers in college” and that people at Bates are “more open” in comparison to experiences in middle school and high school. Between the two focus groups, there were nearly 20 references to middle school and high school, mostly mentioning that there was more stigma and that learning differences were more obvious prior to college due to being pulled out of standard classrooms for resource rooms. The generally more positive experiences reported at Bates than at previous schools were often attributed to students being older in college. When talking about personal experience, and not just the topic of learning differences in general, participants brought up issues of disclosure, plus times of struggle and success. There were two participants, one in each focus group, who had chosen to not disclose their learning differences to Bates, primarily because they felt as though they had learned to manage and cope themselves without formal accommodations. For individuals who had disclosed their learning differences to the college in order to get accommodations, some brought up that it is not always “common” to disclose to their peers. One mentioned that she “stopped telling people” because “it wasn’t fun” to be met with negative attitudes by her peers in high school. Personal difficulties and academic challenges included “unbearable foot tapping” by a peer during an exam, “days when I waste a lot of time looking random stuff up,” staying up for 63 hours in a week to fix a thesis mistake, and not getting sufficient accommodations for thesis. Positive anecdotes, however, included being encouraged by professors to take advantage of accommodations after doing poorly on an
exam, and not facing “stigma in my friend group here.” Overall, personal experience—both past and current—often referred to difficulties and successes in relation to academics, accommodations, and stigma.

In terms of learning difference salience, the vast majority of contexts relevant to learning differences were academic, such as exams, papers, thesis, and classrooms. Only two participants talked about having difficulty and noticing their learning differences in non-academic situations—“it’s about social interactions for me because I can’t focus on social interactions.”

When it comes to addressing their own learning differences, participants talked about both their own coping strategies and formalized resources and support. The formalized support and resources for students with learning differences that were brought up included professors, deans, Holly Gurney specifically, Lane Hall (as the location for extended test time and as a reference to accommodations), tutors, and accommodations such as extra time. Active Minds and the Student Support Network were also mentioned six times collectively, but participants pointed out that neither of those organizations address learning differences specifically. Participants did respond positively to the idea of having a peer support group for learning differences in the future. One participant thought a peer group that met even “just once or twice a semester” would be nice, while another thought that something similar to “Big Brother, Big Sister” would be beneficial in which upperclassmen with learning differences helped teach underclassmen with learning differences tools they could use to succeed at Bates. Other suggestions for addressing stigma through education were a panel of students with learning differences talking to professors and their peers, and a panel of professors who had overcome learning differences talking about their experiences to students.
The ways in which participants talked about addressing their learning differences went beyond formalized resources and support on campus. While extra time for exams and medication were frequently referenced as necessary components of accommodating for learning differences, participants discussed their own personal, active coping strategies. One participant said that from a young age he has thought to himself, “How can I tailor my learning style…to use my learning difference to my advantage?” Personal coping strategies included alternating doing work and playing Tetris, finding the quietest study spots possible (e.g. a computer lab in the Carnegie basement “with no windows, light, or people…it’s silent and beautiful”), sticking to schedules, planning in extra time, giving oneself time blocks, and making sure to get enough rest. Even extended test time and medication were talked about as coping strategies, rather than passive treatment or accommodations that have been bestowed. Participants talked about being intentional with their medication—some had chosen on their own accord to stop taking medication all together, some only take it when they feel it is absolutely necessary, and some put off taking it until they got to college. As for extended test time, one participant said it’s more about going to Lane Hall for extra time “to be isolated” and “to talk out essays” than just having more time.

One area for confusion and concern, though, was the lack of transparency on an institutional level in terms of individual rights and qualifications in regards to accommodations. One participant, who had difficulty securing a personal writing tutor specifically for her thesis, stated, “I was motivated to fight for myself…there’s no place we can look up our rights and what we get.” That self-assertion and advocacy mirrors the intentionality of utilizing resources, accommodations, and personal coping strategies.
Non-LD Participants—Basic Knowledge

The first category for participants without learning differences, basic knowledge, includes language usage and understanding of language connotations, in addition to knowledge of learning differences and resources.

Participants without learning differences distinguished between the terms “learning difference,” “learning disorder,” and “learning disability” by the connotations that each term implied. “Disorder” was conceptualized as “something wrong with a person, rather than something unique.” Participants thought it might be easier for individuals to disclose as having a “learning difference” since that term “makes it sound more like something about you,” “makes it sound like something’s different,” and “implies that someone needs to learn in a different way.” Alternatively, “disability” was seen as having the most negative connotations, since “disability implies that it’s worse,” can be equated “with physical disabilities,” “means not able to learn,” and is a “more closed off term.” Participants most often referred to individuals with learning differences by the actual diagnosis (e.g. “someone who has ADHD”) or by referring to the accommodations people receive (e.g. “someone who gets extra time”), rather than the terms “learning difference” or “learning disability,” which were only used two and four times respectively.

Participants’ knowledge of learning differences was focused on difficulty and difference. Some examples of difficulty cited were, “they can’t take notes while trying to process at the same time,” “they can’t perform as well as people without a disability,” and “they can’t concentrate on their work.” While two participants pointed out, “if you have a learning disability you can perform just as well,” and “I know a few people who have learning disabilities who are really smart,” both of those statements were modified by saying, “you have to do it through a
different way” and “they have to deal with learning a different way.” When it came to knowledge of resources, participants were confident that the resources were out there for people who needed them, but their actual knowledge of those resources did not extend far beyond knowing to “go to the deans for extra time or something” or “going to the health center and they’ll be really open to helping you.”

*Non-LD Participants—Experiences with Learning Differences*

The second category for participants without learning differences, experiences with learning differences, encompasses when and why learning differences are salient to participants, and the different contexts in which participants have experiences with learning differences.

Participants seemed to equate learning differences to difficulties, diagnoses, and accommodations. They mentioned learning difference salience in academic contexts such as test taking, “struggling to read aloud more than others,” and in study groups or review sessions noticing that “some kids might be struggling.” Extra time was regarded as an indicator of learning differences, in addition to tutors and note takers, so “getting extra time,” became equated to an individual with a learning difference. Furthermore, ADD/ADHD and dyslexia were the two most frequently referenced specific learning differences, referenced 16 and six times respectively.

In addition to the different academic contexts at Bates in which learning differences are salient, participants also made comparisons between the context at Bates and prior to Bates, such as middle school and high school. In contrast to comments about how negative experiences seemed in middle school in high school (e.g. “in high school, more like middle school especially, people were teased for it” and “younger kids don’t get it”), there were a number of positive
claims about peer perceptions and stigma (or lack thereof) at Bates. Some of these notably positive claims were, “all my friends understand what a learning difference is,” “at Bates, people are older now, they understand,” “people are more accepting here,” “I don’t think there is a stigma with learning differences or learning disorders on campus, especially at Bates,” and “at least on our campus people are very good…not stigmatizing those who do suffer from [learning differences].”

When it came to personal relevance and experience, participants talked about relatives with diagnosed learning differences and having friends “that take medication,” who “talk about it all the time,” and who “get extra time on tests.” Yet there seemed to be an ‘out of sight, out of mind’ mentality. While having friends with learning differences gave one participant “a reason to care,” another participant stated, “since I don’t have one, it’s not something I ever think about or worry about.” Another participant agreed, saying, “it’s one of those problems you really only think about if you’ve been diagnosed.” There was general agreement that learning differences were “off to the side,” “not something you talk about and highlight,” and “definitely hidden.” Especially for participants who had wondered at some point whether they themselves needed accommodations or had a learning difference, educating the student body as to what constitutes a learning difference and qualifies for accommodations was seen as something that might be beneficial.

Non-LD Participants—Peer Perceptions

The third category for participants without learning differences, peer perceptions, refers to participants’ perceptions of their peers who have learning differences, and participants’
perceptions of their peers who do not have learning differences. It also encompasses participants’ perceptions of their peers’ beliefs.

Participants’ perceptions of learning differences and accommodations can be broken down into two categories: difficulty and commonality/generalizability. Regarding difficulty, one participant referred to learning differences as “something they have to deal with.” Another thought “it’s frustrating for [people with learning differences] because they’re not able to keep up with the general pace.” Even though many perceptions of learning difference were related to personal difficulty, learning differences and accommodations were also perceived as common and generalizable. Specifically, participants thought “it’s not that unheard of for someone to need extra time,” and “ADHD nowadays is a common thing people think of.”

To further delve into perceptions of learning differences, though, it is important to note that diagnoses and specifics matter. Participants generally agreed that dyslexia and depression were diagnoses that were more legitimised than ADHD, which “people don’t take as seriously.” For accommodations, one participant pointed out that note taking “is viewed differently than extra test time” since note taking can go completely unnoticed while extra test time is more obvious, and two others thought that “medication is an indication of something more serious or severe than just extra time.”

While participants were sometimes hesitant about sharing their own perceptions of learning differences and accommodations, they did express beliefs of how they think other people at Bates perceive learning differences. Regarding accommodations, one participant reported, “I can see how some people might think accommodations are unfair.” Another was quick to point out, “that’s not what I think,” after stating that some people “might think [accommodations] are an advantage they’re being given.” No participants explicitly stated that
they personally felt as though ADHD was a delegitimized learning difference, but many of them mentioned hearing talk about ADHD being delegitimized. One said, “I’ve definitely heard people say they don’t believe in ADHD,” one said there’s a “lot of talk about ADD/ADHD not being real,” and another participant stated, “it’s said a lot of people take Adderall” without prescriptions. These statements demonstrate perceived stigma, rather than explicit stigma.
Study 1 Discussion

The aim of this study was to better understand the ways in which students think about learning differences and accommodations. Five separate focus groups, two with Bates students who have diagnosed learning differences and three with Bates students who do not have learning differences, were conducted to synthesize and compare peer and self-perceptions of learning differences. Notably, there seemed to be a general level of agreement in terms of language connotations, perceived stigma, and misunderstandings of learning differences and accommodations. The contingencies and discrepancies within those agreements, though, provide telling insight into these complicated issues.

Language

There was agreement between individuals with diagnosed learning differences and those without learning differences that “learning disability” has more negative connotations and implies a more serious condition than the term “difference.” However, individuals with learning differences used the term “learning disability” more often than the term “learning difference” even though they reported preferring the term “difference.”

External labels can affect how people perceive groups of individuals. In a study comparing views of “mentally subnormal,” “mentally handicapped,” and “people with learning difficulties,” Eayrs, Ellis, and Jones (1993) found that the label “people with learning difficulties” warranted more positive attitudes and views than the other two labels. Furthermore, they found that “people with learning difficulties” were viewed as more able but also less deserving of “special provisions” than the other two labels. While this study was conducted in the United Kingdom and did not address learning disorder and learning difference labels
specifically, the resulting themes are still relevant to the current research. The fact that “learning difficulties” were perceived as more positive yet less deserving of special provisions lines up with the idea that the label of “learning difference” is perceived more positively than “disability” or “disorder,” yet might be less legitimized and therefore less warranting of accommodations than the other two labels. A replication of Eayrs et al.’s work with the three labels changed to the three discussed in this study could provide telling and confirmatory data to support the negotiation between terms that offer legitimization and those that offer positive perceptions and therefore less stigma.

In Study 1, the apparent discrepancy between language preferences and usage could be a subconscious choice that individuals with learning differences are exercising in order to legitimize their diagnoses and personal difficulties. Through this personal negotiation, individuals with learning differences may employ the term “disability” as an attempt to prioritize the benefits of legitimization over the costs of the negative connotations associated with the term. This could relate back to Schreiber and Hartrick’s (2002) finding that women used the biomedical explanatory model of depression to buffer against felt stigma (the internal shame associated with depression and fear of being the target of enacted stigma). While “disability” may have more negative connotations than the term “difference,” it may resemble the more clinical and biomedical term than “difference,” and therefore serve as a similar buffer for felt stigma around learning differences.

Linguistic reclamation is another avenue through which the personal use of “disability,” despite its negative connotations, may be beneficial for individuals with learning differences. Two larger-scale examples of linguistic reappropriation are African Americans referring to other African Americans by the n-word, and non-heterosexual individuals self-labeling as “queer.”
Galinsky, Hugenberg, Groom and Bodenhausen (2003) point out that these two movements have manifested themselves differently, with “queer” being promoted by activists as a self-referential label also incorporated into broader conversations about sexuality, and the n-word only being used by a subset of African Americans, rendering that label “possessive and territorialized” (Galinsky et al., 2003, p. 234). Regardless of whether a label is used on a broader, national level, self-use of a group label does provide members with a form of power. Galinsky et al. found that participants evaluated both a queer individual and the term “queer” more positively if the individual self-labeled as queer than if the individual was externally labeled as such. They suggest that this shows self-labeling can transform the meaning and valence of the term. In another example, Galinsky et al. use the self-proclaimed term “geek” to address the ability to self-label, and note that recent associations between technical skills and economic success provide a more accepting environment for the formerly derogatory word “geek” to be self-proclaimed and owned in a positive way. On a similar note, participants in the current study correctly noted that learning differences are more commonplace now than they have been in the past, which might make self-claims to having learning differences more feasible and potentially better received than in the past.

While there are individual discrepancies in language use, similar inconsistencies and questions are apparent on an institutional level as well. During the initial brainstorming period of this study, Joshua McIntosh, Vice President of Student Affairs, stated that he had never been at a higher education institution before that so intentionally used the term “learning differences” over “learning disabilities” to describe students with diagnoses warranting accommodations. He pointed out that language usage could be confusing since there are certain legal standards that Bates needs to meet as an institution based on the Americans with Disabilities Act and other
legislation for students with learning disabilities, and he thought that “learning differences” could be interpreted as different stylistic preferences in learning (J. McIntosh, personal communication, October 7, 2014). The decision to use the term “learning differences” at Bates is one to promote inclusivity and serves to function as a broad umbrella term that encompasses many different students and diagnoses (H. Gurney, personal communication, September 9, 2014). The fact that students with learning differences vocalized a preference for the term “difference” during the two focus groups does provide a level of support for the continued use of that term by the college.

When it comes to the ways in which participants referred to groups of people, it is notable that across all five focus groups, individuals without learning differences were most frequently referred to as “people.” This shows a normativity associated with not having a diagnosed learning difference. While participants without learning differences did not talk about themselves in a “we” or “us” based group way, they most frequently referred to people with learning differences as “they” or “them,” which suggests othering. By using the term “people,” in reference to like-type individuals, participants without learning differences demonstrated more group collectivity than participants with learning differences who referred to like-type individuals as “you” to indirectly express their own experiences, which shows more individualization. In their study of othering in the context of health care services for South Asian immigrants, Johnson et al. (2004) found that health care providers demonstrated othering by differentiating between “us” (i.e. caregivers) and “them” (i.e. South Asian immigrants). They conclude that these linguistic choices may seem innocuous, but can unintentionally perpetuate wider social issues.
The overall use of indefinite pronouns to talk generally about other people is interesting in light of the significant difference between the average number of times the personal “I” was used between focus groups with individuals who have learning differences and focus groups with individuals who do not have learning differences. There is evidence for pronoun use being related to individuals’ social status. Through five studies on pronoun use and social hierarchy, Kacewicz, Pennebaker, Davis, Jeon and Graesser (2014) found that lower status individuals used the personal pronoun “I” significantly more frequently than higher status individuals. Furthermore, they found that higher status individuals used third-person plural pronouns (e.g. “they”) marginally more than lower status individuals. While participants for the current study were separated based on whether or not they have diagnosed learning differences, the overall normativity associated with a lack of learning differences might imply a lower social status in some scenarios for individuals with learning differences. That would line up with Kacewicz et. al.’s findings around pronoun usage, and provide an interesting avenue for future research if focus groups were to be conducted with individuals with and without learning differences together to see if their pronoun usage changed when interacting with each other.

In general, individuals with learning differences seemed to have more to say than individuals without learning differences, as evidenced by the significantly longer average length of focus groups. Not only did they talk more than individuals without learning differences, but individuals with learning differences were more willing to talk about their personal experiences and beliefs. It is unclear whether participants without learning differences were more restrained in their use of “I” as a function of not knowing what they really think about learning differences, or in conformity to the social desirability bias of not wanting to come across as thinking poorly of their peers. The former is entirely plausible, since participants without learning differences
reported that they did not commit a lot of time to thinking about learning differences and accommodations.

Peer and Self-Perceptions

In addition to how participants themselves perceived learning differences and accommodations, there was an added layer of how participants perceived other people’s perceptions of learning differences and accommodations. Comments that speculated about how they believed other people conceptualized these issues are reminiscent of May and Stone’s (2010) metastereotype findings from what their participants thought people in general believed about individuals with learning disabilities. None of the focus group questions specifically asked participants to talk about their feelings towards individuals with learning differences; rather participants were asked about their thoughts on learning differences and accommodations, and how they thought those diagnoses and systems were perceived on campus. The questions for the current study were posed to ask about how participants think diagnoses and formalized support are viewed, not people, in order to make participants feel more comfortable responding since focus groups cannot be anonymous. When talking about negative perceptions of learning differences that they thought their peers had, some participants even pointed out “that’s not how I feel, though,” to make a clear distinction between what they were reporting as perceptions on behalf of other people and perceptions that they themselves held or were willing to state.

While some participants explicitly shared personal opinions, other opinions and associations became evident through the coding process. For example, some participants without learning differences would refer to peers with learning differences in terms of their accommodations, which shows a strong association—and possibly an equation—between
learning differences and accommodations. Additionally, while the “learning differences” category at Bates is fairly expansive and encompasses a wide range of diagnoses and differences, ADD/ADHD and dyslexia were mentioned the most by both categories of participants. This shows that people seem to associate learning differences with those two diagnoses specifically, though there were key distinctions made between the two. Participants with learning differences, however, did not frequently refer to their own learning differences by the diagnostic names. Rather, they talked about their difficulties, such as “I can’t focus” or “it takes me forever to read.” This shows more of an association between learning differences and the diagnostic criteria, rather than with the diagnostic name or the accommodations, by individuals with learning differences.

For both categories of participants, the theme of diagnoses and specifics mattering for peer perceptions of learning differences and accommodations was evident. For diagnoses, dyslexia was perceived as more legitimized than ADHD. For accommodations, medication was seen as indicating something “more serious”, and extra time was perceived as a potential trigger for jealousy. For medication specifically, ADHD medication was perceived as delegitimized, especially compared to medication for depression. In their study of university students in the United States, DeSantis, Webb and Noar (2008) found that 34% of their 1,811 survey participants reported using ADHD medication illegally. Through interviews, they determined that “ADHD stimulants were a salient part of their university culture,” and illicit use was seen as “normal” or “common” (DeSantis et al., 2008, p. 317). DeSantis et al. also found that participants expressed the belief that the medication was physically and psychologically harmless, further demonstrating the normalization of illicit ADHD medication use and overall delegitimization of ADHD medication as a powerful drug.
Although rates of students with autism spectrum disorder (ASD) pursuing higher education are rising as well, the specific autism diagnosis was only mentioned in one focus group as a diagnosis that a participant associated with the term “learning disability.” According to Matthews, Ly and Goldberg (2015), 2% of college students with disabilities have ASD and 56% of colleges and universities have at least one enrolled student who has been diagnosed with ASD. The CIRP survey in 2012 indicates that 0.4% of all baccalaureate first-year students have ASD and 0.5% of first-year students at private, four-year colleges (Pryor et al., 2012). As the rates of ASD increase, it would be beneficial to determine how college students perceive ASD as compared to other learning differences such as dyslexia and ADHD, which are viewed differently than one another. While Matthews et al. demonstrated that college students viewed a hypothetical individual displaying symptoms of ASD more positively when the individual was labeled as having high-functioning autism as opposed to not having a label, perceptions of high-functioning autism compared to other diagnostic labels would be an interesting avenue for future research.

Across all five focus groups from the current study, there was mention of ADHD medication being taken without prescriptions, and “fake diagnoses” for people trying to work the system and fake their way to a diagnosis so they can get the benefits associated with accommodations. Instances of fake diagnoses and self-prescribed medication use were seen as delegitimizing for learning differences in general, and detrimental for the legitimization of ADHD the most. One participant with a learning difference talked about repeatedly being asked for Adderall by her peers over the years. In general, participants with learning differences felt as though it was delegitimizing for the people who actually need the medication when others take un-prescribed ADHD medication to focus more than they already can.
In terms of self-perceptions and assertions, participants with diagnosed learning differences often talked about the difficulties they have that are associated with their learning differences. These claims, such as not being able to focus or taking a long time to read and write, could be interpreted as claims to legitimacy. In his exploration of psychiatric diagnoses and legitimacy over the years, Rosenberg (2006) notes that in our medicalized society, diseases are most legitimized when they have a clear set of diagnostic criteria such that the diseases exist outside their “unique manifestations” in individual cases. Rosenberg also points out that the terms “hyperactive” and “attention deficit” are dependent on context, thus providing a challenge to ADHD existing as a disorder that can be completely separated from the person with that diagnosis. It makes sense, therefore, that individuals with ADHD and other learning differences explicitly discuss the diagnostic criteria that result in their diagnoses and accommodations, since the diagnostic labels might not be legitimized on their own.

In contrast to the claims to legitimacy, though, are the claims to normalcy and intelligence that participants with learning differences made as well, such as “we are all smart individuals” or “there’s nothing wrong with us physically.” The assertions of both difficulty and normalcy go back to the negotiation between legitimization and stigma, as discussed earlier when examining discrepancies in language preferences and actual usage. By directly pointing out the challenges associated with their learning differences rather than just stating what they have by the diagnosed name, participants are legitimizing their diagnoses and therefore justifying their accommodations. Alternatively, claims to normalcy and intelligence are rebuttals to stigma and misunderstanding from their peers without learning differences.

The inclination not to differentiate between the person, the diagnosis, and the accommodations is a theme that became apparent through the focus group coding process. One
participant with a diagnosed learning difference recalled that in high school some of her peers would say, “oh I want a learning disability, I want extra time,” but she wanted to combat that by saying, “no, you don’t seem to get why I get extra time,” since her peers were associating a learning disability diagnosis with accommodations, rather than associating a learning disability diagnosis with the difficulties and challenges warranting the diagnosis. Similarly, another participant said, “I feel like people just forget the diagnosis and just are like, ‘wow, they get extra time, I’m jealous’ or ‘that’s not fair’ but then like you said, they’re totally forgetting we have this. Like we would love to be able to take a test in just an hour but it just doesn’t work with us.”

The association between learning differences and the accommodations warranted by diagnoses was evidenced by the participants without learning differences. For example, during the first focus group with participants who do not have learning differences, “extra time on tests” was the response to “What do you think of when you hear the terms ‘learning difference,’ ‘learning disability,’ or ‘learning disorder’?” When participants were asked if they would know where to go on campus if they thought for the first time they might have a learning difference themselves, one participant said, “you’re supposed to go to the deans for extra time or something,” which serves as an example of an association between learning differences and accommodations. Another association example is one participant’s account of a peer with a learning difference in high school, whom she referred to as the “one kid who needed extra time.” Together, direct and indirect associations between learning differences and accommodations by participants who do not have learning differences confirms the perceptions participants with learning differences have about one of the ways in which they are viewed by their peers.
**Self-Advocacy & Intentionality**

While participants without learning differences often associated learning differences with their accommodations, participants who have learning differences talked a lot about their own coping strategies which go beyond the formalized resources and accommodations that Bates offers as an institution. Even when they were addressing their formal accommodations, individuals with learning differences talked about utilizing them in an active, intentional way. By coming up with their own coping strategies, such as setting up time blocks for schoolwork or alternating Tetris and schoolwork, individuals took responsibility and ownership over their learning differences. In a study of 173 students with learning disabilities ages 9-14, Núñez et al. (2005) differentiated between students with adaptive profiles who attributed success to internal factors and failures to a concurrence of external factors, and students with helplessness profiles who attributed success to external factors and failures to internal factors. Núñez et al. found that students with adaptive attributional profiles had greater confidence in their ability to cope with schoolwork, persistence following failure, and academic achievement than students with helplessness attributional profiles. Those results show that active coping with learning differences is correlated with academic success for middle school- and high school-aged students. For university students, Kirby, Silvestri, Allingham, Parila and La Fave (2008) found that students with dyslexia reported greater use of deeper learning and time management strategies than students without dyslexia. Together, these two studies suggest that students with learning differences report taking more effortful approaches to learning than their peers without learning differences, and of those students with learning differences, those who take personal, active responsibility for their academic success achieve the best results.
Although the usage of personal coping strategies to succeed academically was something that only came up in the focus groups with participants with learning differences, that does not mean students without learning differences are foregoing the employment of innovative study strategies. Prior research has focused on generic or general study strategies (Kirby et al., 2008). By asking college students about specific and self-discovered study strategies in an open-ended format, comparisons could be made between students with and without learning differences, and between students with learning differences to see if within-group differences arise similar to Núñez et al.’s (2005) findings of the two different attributional profiles.

For additional coping mechanisms, the way that medication is utilized very intentionally shows an active negotiation of how accommodations are used on a day-to-day basis. In reference to her own ADHD medication use, one participant stated, “I always feel like I have to say I wasn’t medicated for a long time. That’s always something I feel like I need to say to make it legitimate for other people and it’s definitely not a conscious thing, I just pretty recently realized I did that whenever people asked me.” While other participants did not explicitly make the link between intentional medication use and legitimization, there were participants who talked about their personal strategies for medication which included only taking the medication during particularly challenging academic weeks or stopping the use of medication all together.

The recognition by every focus group that learning differences are somewhat “out of sight, out of mind” on the Bates campus makes self-advocacy that much more relevant for individuals with diagnosed learning differences. The participant who wanted a writing tutor specifically for thesis talked about being motivated to fight for herself, which she saw as necessary since there were not any additional formalized supports for individuals with learning differences for thesis specifically. While participants without learning differences did not
acknowledge the need for self-advocacy as explicitly, the general consensus was that accommodations and resources were there for people who needed them. Their confidence in the availability of resources was contrasted by their lack of actual knowledge of those resources, which highlights issues of personal relevance. However, their recognition that resources exist but lack of further knowledge about the resources does at least inadvertently acknowledge the need for self-advocacy and ownership for individuals with learning differences who feel as though they need formalized accommodations and support. The lack of recognition in terms of the difficulties associated with self-advocacy and disclosure by participants without learning differences exemplifies an area for education to improve peer understandings and even legitimization through empathy.

Generalized Claims vs. Anecdotal Reports

In every focus group generalized claims were made about the perceived lack of stigma at Bates, the fact that people at Bates are pretty “open,” and that Bates seems to be socially more supportive than high school or middle school. Those generalized claims are encouraging in the sense that the term “stigma” is not something that people in the focus groups explicitly saw as applicable at Bates. That being said, individuals with learning differences reported repeatedly that they felt misunderstood by their peers, and individuals without learning differences perceived that their peers misunderstood other people with learning differences. For example, the perceived delegitimization of ADHD—recognized by participants both with and without learning differences—is a demonstration of the disjuncture between the generalized claims about a lack of stigma and the anecdotal reports that paint a different picture. Essentially, there seems to be a
discrepancy between discourse around stigma and the discussions of acts and stories that at least inadvertently suggest a level of stigma and misunderstanding.

**Limitations**

The biggest limitation for this study is the low number of participants. While the focus group model is to have a low number of participants in each group, more participants for a greater number of groups would have increased the number of opinions and the amount of generalizability, and would have added to the general depth of insight gained through these focus groups. Furthermore, it would have been beneficial to split up focus groups by class year in addition to whether or not they have learning differences. Dean Gurney had previously mentioned that first-year students might have a “wall” built up from their time pre-Bates dealing with stigma from more immature peers, whereas upperclassmen at Bates would have spent the past few years in a more welcoming environment (H. Gurney, personal communication, September 9, 2014). That would suggest that self-perceptions and peer experiences might be different for students with learning differences in their first year versus their fourth year at Bates. Having a greater number of participants would have allowed for comparisons by class year in terms of their reported experiences.

Since it is apparent that ADHD and dyslexia are at least thought to be perceived differently, it might also be interesting to conduct additional focus groups with participants split up by diagnosis. In one focus group, a participant with ADHD seemed to temporarily talk less after another participant with dyslexia voiced her belief that there wasn’t much stigma at Bates (something the participant with ADHD later refuted). Participants were split based on whether or not they had a learning difference in order to make participants feel as comfortable as possible
sharing their experiences and opinions, but further breakdown by diagnosis might increase the depth of conversations during focus groups.

The focus group design allowed for conversation between participants, which was helpful for drawing out more information and for participants to be exposed to different background experiences and opinions. That said, the design also eliminated any possibility of anonymity, which brings up issues of social desirability and demand characteristics. For participants without learning differences, there were no explicit reports of personal stigma against students with learning differences, which could be true but may instead reflect an attempt to respond in a way that would be viewed positively by their peers. Furthermore, whenever findings are reliant on self-reported information, it is indiscernible whether the data reflect how people actually act and think on a daily basis.

While shorter focus groups for participants without learning differences could have been interpreted as less information to work with, the discrepancy in average focus group length between participants with and without learning differences is telling in itself. That discrepancy, and the fact that participants without learning differences talked less, could be a result of being uncomfortable because they were hiding their real feelings. Alternatively, it is possible that they may not know how they really feel about issues around learning differences since that is something they are not forced to give a lot of attention to. If there had been more weeks to conduct Study 1, it might have been helpful to employ a second round of the focus groups so participants would have had time to think about topics raised in the first round and so they would feel more comfortable with the people in their discussion groups.

One additional limitation in terms of being able to make comparisons to prior research was the way questions were asked. Participants were asked how they thought people perceived
accommodations or diagnoses, rather than how individuals with learning differences were viewed, which is how May and Stone (2010) presented their metastereotype questions. That decision was made since the focus groups cannot guarantee anonymity in the way that a survey can, but limits the ability to make direct comparisons to May and Stone’s findings.

Recommendations

The primary recommendation that I would make after conducting and analyzing these focus groups would be to increase transparency on an institutional level. The general consensus was that resources and information are available if you know where to look, but having more clearly defined qualifications for accommodations associated with learning differences and outlined steps and resources would help individuals with learning differences better understand their rights on campus, and would help students without learning differences know about the resources as well. Furthermore, better public information would make learning differences feel less swept off to the side and could give individuals without learning differences a better understanding of the diagnoses and related accommodations. The Bates website does have some information about resources and accommodations for students with learning differences, but it is fairly vague on the whole and is presented as information for entering students. While upperclass participants talked about having tailored their study strategies over their years at Bates to deal with the academic load (e.g. the fact that Bates is “writing-heavy”), the difficulties associated with learning differences do not go away throughout college and there remains room for support beyond initial enrollment at Bates.

Education is a powerful tool and could be utilized to decrease the high degree of misunderstanding about learning differences and accommodations perceived by participants both
with and without learning differences. In the first focus group with individuals who have
diagnosed learning differences, two panels were suggested: one with students who have learning
differences to discuss their experiences for peers and professors, and one with professors who
have overcome learning differences and succeeded in academia. Participants in the second focus
group of individuals who have learning differences felt there was a definite opportunity for a
peer support network for individuals with learning differences. They talked about the coping
strategies they have developed over the years and thought it would have been beneficial to have
heard from upperclassmen when they had started at Bates to learn about these strategies earlier
on. A peer support group or dinner that meets once or twice a semester was suggested as a forum
for creating a community of support with each other. Another avenue proposed by a participant
who does not have a learning difference was incorporating education about learning differences
into first-year orientation so all students understand the need for and practice of resources and
accommodations on campus. It would be beneficial for all students—regardless of their learning
difference status—to feel more knowledgeable about these issues because it could facilitate even
better self-advocacy for individuals with learning differences and provide individuals without
learning differences a clearer sense of their own thoughts on these issues. While there was no
significant difference in terms of reported knowledge of learning differences between
participants who had learning differences and participants who did not have learning differences,
it is important to note that reported knowledge does not necessarily match actual knowledge.

Conclusion and Future Directions

The aim of this study was to better understand the ways in which students think about
learning differences and accommodations. The results of the focus group analysis provide a
clearer picture of how learning differences and accommodations are perceived and thought to be perceived on campus, but that picture is still riddled with discrepancies and complications. As a topic that seems to not frequently be discussed on campus and one that has not been extensively, systematically measured before, there is still much to be learned about peer and self-perceptions of learning differences. There are many directions for future research that could be explored after this study, such as conducting multiple rounds and combinations of focus groups, conducting focus groups with professors, or focusing on personalized study and coping strategies employed by college students with and without learning differences. One of the biggest takeaways from this study was the confirmation that various diagnoses and accommodations are viewed and perceived to be viewed differently from each other. The focus groups with individuals with learning differences were particularly interesting because of the in-depth conversations and anecdotes participants were able to share with each other.

The findings from this study are important not only for informing the development of a systematic measure of peer and self-perceptions of learning differences, but for getting a better understanding of how learning differences are viewed and perceived to be viewed at Bates. An interesting finding that supports prior research is the stigma and misunderstanding around learning differences and accommodations that were perceived by participants with and without learning differences. While it is still unclear whether there is real stigma against individuals with learning differences and/or their accommodations, overall agreement about perceived stigma still has important implications for the day-to-day experience of students with learning differences. As evidenced by Steele’s (1997) work, individuals do not need to internalize or self-identify with a negative stereotype in order for it to have detrimental effects on their performance. That means
the perceived stigma can serve as a situational threat of a negative stereotype that could have negative effects on the academic performance of individuals with learning differences.

Since participants across the board reported perceived stigma and misunderstanding around learning differences and accommodations, a systematic measure would be helpful to determine whether that actually exists. As recognized through the design of this initial study, self-report and social desirability issues are important to consider when trying to uncover and measure stigma. Tests for implicit bias such as the Implicit Association Test (IAT) and Go/No-Go Association Task (GNAT) may be beneficial because they can measure biases that people are either unwilling to explicitly self-report or that people are unaware of altogether. Thus, GNATs to test implicit biases against learning differences will be designed and employed for Study 2.
Study 2

Previous research has employed questionnaires to examine knowledge of specific learning disorders (Mortimore, 2013) and open-response surveys to investigate perceived stereotypes against people with learning differences in higher education (May & Stone, 2010), but to date there has been no systematic measure of stigma or bias against learning differences. In Study 1, participants were asked about beliefs about learning difference diagnoses and accommodations, not specifically attitudes towards people with learning differences. Through the focus groups conducted in Study 1, it became evident that there was a stigma against learning differences *perceived* by students both with and without learning differences. It is important to note, however, that none of the participants without learning differences explicitly reported personal stigma against learning differences; rather they reported stigma and misunderstanding based on statements they had overheard from their peers or beliefs they felt existed on campus. Furthermore, both participants with and without learning differences made statements about there not really being stigma against learning differences at Bates. Those overarching statements show a disconnect between overall beliefs of no stigma contrasted by reported events and statements suggesting perceived stigma and misunderstandings.

Since participants in Study 1 did not explicitly report personal stigma, it may be beneficial to employ a systematic measure of bias that tests implicit attitudes. Implicit attitudes are defined as “actions or judgments that are under the control of automatically activated evaluation, without the performer’s awareness of that causation” (Greenwald, McGhee & Schwartz, 1998). Through their review of research on implicit attitudes towards disabilities over the last decade, Wilson and Scior (2014) found that, on the whole, people have relatively strong negative implicit attitudes against individuals with disabilities. Explicit attitudes have apparently
become less negative over time, though, most likely through advocacy and education. Since explicit attitudes about learning differences have not been extensively studied among students in higher education, questions addressing explicit stigma will also be included in this study.

The Implicit Association Test (IAT) is perhaps the most well known test of implicit bias and was developed to assess implicit associations between pairs of categories. The IAT asks participants to respond to words or images presented on a screen, typically pairing one category with positive valence words and the other category with negative valence words by having each pairing share a response key, then switching the category pairings. By measuring reaction time and error rates, researchers can calculate collective and individual variation in implicit bias (Greenwald, McGhee, & Schwarz, 1998).

When measuring bias against a social group, self-report measures can fall victim to the social desirability bias causing participants to indicate more positive views than they may actually have. Implicit tests therefore seek to uncover biases that people do not want to explicitly state. Additionally, implicit association tests can detect biases that people are unaware they have. Galdi, Cadinu and Tomasetto (2014) employed a child-IAT on gender and academic subjects to test whether automatic associations precede conscious beliefs, since young children do not typically endorse gendered academic stereotypes. Even though the 6-year-old participants did not explicitly endorse the math-gender stereotype, girls showed an automatic association between boys and math, and girls and language. This study provides evidence that people can exhibit an implicit bias before they are able to explicitly articulate or agree with that bias, and implicit tests can do more than uncover bias people are unwilling to explicitly articulate. Since participants in Study 1 explicitly stated that there was not much stigma at Bates in spite of their reports indicating a bias against learning differences, an implicit test is that much more relevant. Not
only can it uncover stigma that people are unwilling to explicitly report, but it could also detect a bias that people are unaware they have.

One disadvantage of IATs is that they require a direct comparison category, which means attitudes towards a social group are only measured in relation to attitudes towards another group. The Go/No-Go Association Task (GNAT) was developed to exclusively focus on responses to a single target category. Rather than requiring two sets of positive and negative categorical pairs, the GNAT asks participants to respond (“go”) by hitting the space bar when they see stimuli that belongs to either the target category or comparison category, and to do nothing (“no-go”) when they see distractor terms or words of the opposite comparison category (Nosek & Banaji, 2001). The GNAT can be beneficial for showing the direction of bias for each individual category, and is particularly useful for testing implicit bias of a category that does not have a clear binary opposite, such as learning differences.

While Galdi et al. (2014) employed an IAT to demonstrate a stronger girl-language and boy-math association than a girl-math and boy-language association, Steffens and Jelenec (2011) employed two GNATs in order to demonstrate the differentiation between implicit attitudes towards gender and math and language studies. Participants were asked to pair math stimuli with either the male or female category, and to pair language stimuli with either the male or female category. Steffens and Jelenec also included an explicit measure of agreement with gender stereotypes and awareness of metastereotypes related to gender. Overall, they found that men showed a math-gender stereotype and that women showed a language-gender stereotype. Furthermore, stronger math-gender stereotypes were correlated with lower math achievement for women but higher math achievement for men. The GNAT therefore allowed the researchers to
tease apart the gender associations with language and math separately so that the biases they found were not reliant on an interaction between the two.

Although there has been more research on implicit associations and bias using the IAT than the GNAT, through their review of GNATs on various topics, Williams and Kaufmann (2012) concluded that the GNAT can achieve good reliability if thoughtfully designed. They make a number of recommendations such as holding block length consistent and including at least 50-80 trials per critical block, which will be followed for this study. Study 2 will center on the development and employment of novel GNATs to test implicit biases against learning differences. Learning differences as an all-encompassing category is the focus for this study, rather than individuals with learning differences, since learning difference category terms do not necessarily align perfectly with individuals, the way images of faces would. While learning difference labels and accommodations cannot exist without the individuals who have them, participants in Study 1 indicated that accommodations might be viewed differently than the people who have them. If people have negative feelings about accommodations (for example) but not individuals with learning differences, then they would have a bias against learning difference terms and not individuals. Furthermore, it will be beneficial to study the general learning difference category since learning differences have not yet been studied using a GNAT.

For Study 2, two GNATs will be employed. Greenwald and Farnham (2000) employed both an affective and evaluative IAT to test implicit self-esteem, and many of their evaluative trait words to assess self-esteem relate to competency. For the current study, the affective (traditional) GNAT will test general feelings of positivity and negativity in relation to terms associated with learning differences, and an evaluative GNAT will test association of positive and negative competency-related traits with terms associated with learning differences. The
evaluative GNAT will focus on the association between learning differences and high or low competency to address May & Stone's (2010) “low ability” metastereotype rather than just feelings of general (affective) positivity or negativity. While participants in Study 1 explicitly indicated a difference between how various diagnoses and accommodations are viewed, the general learning difference category that Bates employs in fact keeps them all together. Furthermore, there are overlaps between different diagnoses and the accommodations they warrant.

Since learning differences are often referred to as learning disabilities, and people show relatively strong implicit attitudes against individuals with disabilities (Wilson & Scior, 2014), it is hypothesized that participants will have stronger associations between learning differences and the negative valence categories than between learning differences and the positive valence categories. Furthermore, it is hypothesized that the relationship will be stronger for the evaluative GNAT than for the affective GNAT. In addition to these measures of implicit bias, a number of items measuring explicit attitudes will be included as well. These will address explicit attitudes towards the intelligence of individuals with learning differences, fairness of accommodations for learning differences, and whether individuals utilizing accommodations are working the system. It is hypothesized that greater explicit bias will be correlated with higher implicit bias against learning differences, and that implicit bias will be more negative than explicit bias overall.
Study 2 Method

Participants

Participants were recruited via email to participate in the study. Emails were sent to the general population of Bates College via the Announce Listserv, and also sent specifically to students enrolled in the Principles of Psychology (Psych. 101) course offering 0.5 participation credits. Students with learning difference who have disclosed to Bates were specifically recruited via blind-copy email by Dean Gurney. For full copies of the recruitment text, see Appendix A. In total, 121 individuals participated in the study, but 11 individuals were eliminated from all data analyses since their overall accuracy on the GNATs were less than 70%. Out of the 110 participants for whom data analysis was conducted, there was a range in age from 18 to 23 years. The mean age was 19.98 years and the standard deviation in years for the sample was 1.43. There were 63 (57.27%) participants who identified as women and 47 (42.73%) who identified as men. Of the 110 participants, 87 individuals (79.09%) identified as Caucasian/European-American/White, 12 individuals (10.91%) identified as Asian/Asian-American, 6 individuals (5.45%) identified as Hispanic/Latino/Latina, and the remaining 5 individuals (4.55%) identified as Multi-Ethnic/Multiracial or Other.

There were 31 participants (19 women, 12 men) who identified as having diagnosed learning differences, and 79 participants (44 women, 35 men) without diagnosed learning differences. The most frequently reported learning differences included ADD/ADHD, dyslexia, and psychological/psychiatric conditions (see Table 4 for a full breakdown of learning difference diagnoses). Of the 31 students with diagnosed learning differences, 24 (77.42%) have disclosed their learning differences to Bates. For those who have disclosed, 10 (41.67%) sometimes and 14 (58.33%) always utilize accommodations granted by the college.
Materials

Participants attended a computer lab session to complete the GNATs testing implicit bias against learning differences, and to answer questions addressing explicit stigma and knowledge of learning differences.

An affective GNAT examined the strength of association between the target concept learning differences (stimuli: disorder, ADHD, dyslexia), and the valence categories positive (stimuli: peace, pleasure, rainbow) and negative (stimuli: crash, accident, grief). An evaluative GNAT examined the strength of association between the target concept learning differences (stimuli: disorder, ADHD, dyslexia, Adderall, extra time), and the attribute categories positive (stimuli: smart, bright, success) and negative (stimuli: stupid, failure, useless). The affective valence terms were selected from the lists employed by Nosek and Banaji (2001) if they were terms that could not be applied to individual performance or personality. The evaluative attribute words were selected from Greenwald and Farnham’s (2000) evaluative self-esteem terms. Specifically, evaluative attribute terms were selected if they were related to competency and success since May and Stone’s (2010) study found that the most common learning difference metastereotype about individuals with learning differences was related to “low ability” in academic settings. For the full lists of terms used in this study, see Appendix F.

Explicit stigma was measured by asking participants to indicate the extent to which they personally agreed with three statements (see Appendix G). These included statements such as, “Individuals with learning differences, on average, are less intelligent than individuals without learning difference.” Statements were derived from the most common metastereotype categories from May and Stone’s (2010) study of perceived stigma against students with learning
differences. Most of the language used was taken directly from May and Stone’s metastereotype category definitions.

Procedure

After providing informed consent (see Appendix C), participants began their first of two GNATs. They were randomly assigned to begin with either the affective or evaluative GNAT, and each GNAT consisted of two critical blocks. Participants were asked to respond to both the target learning difference category and positive terms (evaluative or affective), or both the learning difference category and negative terms (evaluative or affective), with 20 practice trials and 80 critical trials per critical block. In total, participants completed 200 trials (40 practice, 160 critical) per GNAT for a total of 400 trials (80 practice, 320 critical) between the two GNATs. Each stimulus term was presented for 700 milliseconds with feedback for 150 milliseconds in between trials. Feedback consisted of a red “X” indicating an incorrect response, or a green circle indicating a correct response. For all trials, the target response categories were displayed at the top of the screen to remind participants of the task. Responding to target stimuli occurred by pressing the space bar (“go”), and distractor stimuli was to be ignored by making no response (“no-go”). The GNATs were counterbalanced so that 51 participants completed the negative block before the positive block for each GNAT, and 59 participants completed the positive block before the negative block for each GNAT. Within each block, terms were presented in a randomized order.

After completing the evaluative and affective GNATs, participants reported their knowledge of learning differences on a scale from 1 (no knowledge) to 4 (expert) per Mortimore’s (2013) study and Study 1. Participants were asked to indicate the extent to which
they agreed with three items testing explicit stigma against learning differences and accommodations (see Appendix G). Finally, participants filled out information about demographics, indicating their learning difference status, gender, class year, ethnicity, and age (see Appendix D).

Participants were debriefed and then provided with a sheet thanking them for their participation in the study (see Appendix E). The “thank you” sheet provided contact information for groups such as the Health Center and St. Mary’s, in case any of the issues raised in the study made participants feel as though they wanted to talk to a professional about themselves or someone they know.

Pilot Testing

The stimuli selected for the target concept (learning differences) were pretested with $N = 25$ individuals at Bates as being terms highly associated with learning differences. The 25 individuals completed a survey asking them to indicate on a scale from one to seven, “To what extent do you think people in general associate this term with learning differences?” The five terms rated the highest on the 7-point scale and above the midpoint of the scale (4) were selected to be used in the two GNATs. One sample $t$-tests were conducted to determine whether those terms were rated significantly higher than the midpoint of the scale (4). Results indicated that “ADHD” ($M = 5.12, SD = 1.54$) was significantly higher than the midpoint, $t(24) = 3.65, p = .001$, “dyslexia” ($M = 5.20, SD = 1.41$) was significantly higher than the midpoint, $t(24) = 4.24, p < .001$, and “extra time” ($M = 4.80, SD = 1.71$) was significantly higher than the midpoint, $t(24) = 2.34, p = .03$. Two of the terms selected, “disorder” ($M = 4.28, SD = 1.72$), $t(24) = 0.81, p = .42$, and “Adderall” ($M = 4.28, SD = 1.51$), $t(24) = 0.92, p = .36$ were not rated as significantly
higher than the midpoint. Those two terms were selected because GNATs require a minimum of
four items per category, and “disorder” and “Adderall” tied for having the fourth highest rating.

The GNATs used in this study were pilot tested with $N = 9$ individuals to determine the
appropriate GNAT response window. A response window that is too long could result in overall
accuracy close to 100%, which poses the problem of a ceiling effect and an inability to compare
accuracy between valence categories. On the other hand, a response window that is too short
could result in high error rates, and it is a standard GNAT practice to remove participants from
data analysis who have less than 70% overall accuracy on critical blocks (Nosek & Banaji,
2001). After pilot testing a range of response windows from 650 milliseconds to 850
milliseconds, 700 milliseconds was determined to be the optimal response window for the
current study.
Study 2 Results

Signal Detection Theory

The GNATs were analyzed according to Signal Detection Theory (Green & Swets, 1966). “Go” trials within a GNAT refer to signal trials, while the “no-go” trials refer to noise trials. Hits are therefore defined as correct signal trials, and false alarms are defined as incorrect noise trials (i.e. incorrectly hitting the space bar for a “no-go”/noise trial). Visual representation of the four response possibilities can be seen in Figure 1. The proportion of hits for signal trials, and the proportion of false alarms for noise trials were converted to z-scores, and the difference between the hit z-score and the false alarm z-score is known as sensitivity or \( d' \) (Green & Swets, 1966). Since hit or false alarm rates of 0 or 1 would correspond to \( z \)-scores of \(-\infty\) or \( +\infty \) respectively, the correction outlined by Stanislaw and Todorov (1999) was applied for the current study. They recommend replacing rates of 0 with \( \frac{0.5}{n} \), and replacing rates of 1 with \( \frac{n-0.5}{n} \), with \( n \) referring to the number of signal or noise trials (Stanislaw & Todorov, 1999). For the evaluative GNAT, hit rates of 1 were corrected to 0.990625 and false alarm rates of 0 were corrected to 0.01875. For the affective GNAT, hit rates of 1 were corrected to 0.990341 and false alarm rates of 0 were corrected to 0.017708.

In order to determine whether participants demonstrated negative implicit bias against learning differences on both the evaluative and affective GNATs, two two-sample \( t \)-tests were conducted (see Figure 2). A two sample \( t \)-test for correlated groups was conducted to determine whether the difference in \( d' \) was greater for negative evaluative trials than for positive evaluative trials. The mean \( d' \) for negative trials (\( M = 2.12, SD = 0.82 \)) was significantly greater than the mean \( d' \) for positive trials (\( M = 1.91, SD = 0.66 \)), \( t(109) = -2.77, p = .007 \). A two sample \( t \)-test for correlated groups was also conducted to determine whether the difference in \( d' \) was greater
for negative affective trials than for positive affective trials. The mean $d'$ for negative trials ($M = 2.65, SD = 0.82$) was significantly greater than the mean $d'$ for positive trials ($M = 2.15, SD = 0.76$), $t(109) = -6.18, p < .001$. This indicates that on both the evaluative and the affective GNATs, participants demonstrated a stronger negative-learning difference association than a positive-learning difference association, and therefore showed negative implicit bias against learning differences.

A paired samples $t$-test was conducted to determine whether $d'$-difference differed between the evaluative and the affective GNAT. The mean $d'$-difference for the affective GNAT ($M = -0.50, SD = 0.85$) was significantly greater than the mean $d'$-difference for the evaluative GNAT ($M = -0.21, SD = 0.80$), $t(109) = 2.80, p = .006$. This means that participants were demonstrating a significantly greater degree of negative implicit bias against learning differences on the affective GNAT compared to the evaluative GNAT.

Two two-way ANOVAs were conducted to determine whether participants with learning differences showed less implicit bias than participants without learning differences. A 2 (Comparison Category: Positive vs. Negative) x 2 (Learning Difference Status: LD vs. Non-LD) analysis of variance (ANOVA) was conducted for the evaluative GNAT. There was a significant main effect of comparison category, confirming the implicit bias, $F(1, 108) = 4.27, p = .04$. There was no significant main effect of learning difference status, and there was no significant interaction between comparison category and learning difference status. A 2 (Comparison Category: Positive vs. Negative) x 2 (Learning Difference Status: LD vs. Non-LD) ANOVA was also conducted for the affective GNAT. There was a significant main effect of comparison category, confirming the implicit bias, $F(1, 108) = 30.32, p < .001$. There was no significant main effect of learning difference status, and there was no significant interaction between
comparison category and learning difference status. The lack of significant main effects of learning difference status and lack of significant interactions between comparison categories and learning difference status mean that for both the evaluative and affective GNATs, participants with and without diagnosed learning differences demonstrated the same extent of negative implicit bias on average.

Reaction Time

Nosek and Banaji (2001) note that response latency is an additional dependent variable that can be considered in addition to sensitivity ($d'$) when assessing GNATs. Since GNATs have truncated response times, reaction times can only be compared for correct responses to signal (“go”) trials. In order to determine whether participants were faster (in milliseconds) to respond when asked to pair learning difference terms with negative terms than with positive terms, two two-sample $t$-tests were conducted (see Figure 3). For the evaluative GNAT, participants were not significantly faster at responding to negative blocks ($M = 493.62, SD = 43.01$) than positive blocks ($M = 492.65, SD = 37.89$). For the affective GNAT, though, participants were significantly faster at responding to negative blocks ($M = 490.92, SD = 32.44$) than positive blocks ($M = 499.33, SD = 37.89$), $t(109) = -2.72, p = .008$, which means participants were showing a negative implicit bias against learning differences based on reaction time for the affective GNAT.

In order to determine whether participants with learning differences demonstrated less reaction time bias than participants without learning differences, two two-way ANOVAs were conducted. A 2 (Comparison Category: Positive vs. Negative) x 2 (Learning Difference Status: LD vs. Non-LD) ANOVA of reaction times on the evaluative GNAT was conducted. There was
no significant main effect of comparison category, nor was there was a significant main effect of learning difference status. Furthermore, there was no significant interaction between comparison category and learning difference status. A 2 (Comparison Category: Positive vs. Negative) x 2 (Learning Difference Status: LD vs. Non-LD) ANOVA was also conducted for the reaction times on the affective GNAT. There was a marginally significant main effect of comparison category, $F(1, 108) = 3.44, p = .07$, confirming the implicit bias, but there was no significant main effect of learning difference status. There was also no significant interaction between comparison category and learning difference status.

Measuring Explicit Stigma

Cronbach’s alpha indicates that the three items measuring explicit stigma against learning differences function as a scale with acceptable internal consistency ($\alpha = .73$). One sample $t$-tests were conducted to determine whether the scale and individual items were significantly different from the midpoint (4). On average, participants’ responses to the scale, $M = 2.21, SD = 1.13$, were significantly below the midpoint (4), $t(108) = -16.56, p < .001$, and the same was true for each of the three individual items. The mean level of agreement with the first item stating, “Individuals with learning differences, on average, are less intelligent than individuals without learning differences,” was $M = 2.00, SD = 1.29, t(108) = -16.15, p < .001$. The mean level of agreement with the second item stating, “Individuals with learning differences are ‘working the system’ by requesting and using accommodations or medication,” was $M = 2.40, SD = 1.32, t(108) = -12.63, p < .001$. The mean level of agreement with the third item stating, “Accommodations for learning differences (such as extended time on tests) are unfair” was $M = 2.21, SD = 1.13, t(108) = -12.11, p < .001$. 
In order to determine whether participants with and without learning differences showed different levels of explicit stigma, independent samples $t$-tests were conducted for the explicit scale as a whole, and for each of the three individual scale items. Participants without learning differences ($M = 2.35, SD = 1.09$) had significantly higher explicit stigma scale scores than participants with learning differences ($M = 1.87, SD = 1.16$), $t(107) = 2.01, p = .05$. Participants with learning differences ($M = 1.67, SD = 1.32$) scored marginally lower on the first explicit stigma item pertaining to low intelligence between than participants without learning differences ($M = 2.14, SD = 1.26$), $t(107) = 1.73, p = .09$. There was no significant difference in scores on the second explicit stigma item pertaining to working the system between participants with learning differences ($M = 2.23, SD = 1.41$) and participants without learning differences ($M = 2.47, SD = 1.30$). For the third explicit stigma item pertaining to accommodations being unfair, however, participants without learning differences on average had significantly higher scores ($M = 2.43, SD = 1.59$) than participants with learning differences ($M = 1.65, SD = 1.31$), $t(108) = 6.34, p = .01$.

Linear regressions were conducted in order to determine whether the amount of negative implicit bias held by individuals ($d'$-difference) could predict the degree to which they agreed with statements around explicit bias against learning differences. For the evaluative GNAT, the explicit stigma scale score could not be predicted by the $d'$-difference. Additionally, explicit stigma scale scores could not be predicted by $d'$-difference for the affective GNAT.

**Reported Knowledge of Learning Differences**

A one-sample $t$-test was conducted to compare the reported average knowledge of learning differences from participants at Bates College to the reported average knowledge of
learning differences from the student participants in Mortimore’s (2013) study. Results indicated that the mean level of self-reported knowledge for Bates students \( M = 2.36, SD = 0.55 \) is significantly higher than the average of Mortimore’s participants \( M = 2.10, t(109) = 4.99, p < .001 \). In addition, a two-sample \( t \)-test for independent groups was conducted to compare the mean knowledge of learning differences between participants who have diagnosed learning differences and participants who do not have learning differences. Individuals who have learning differences reported significantly greater knowledge of learning differences \( M = 2.71, SD = 0.48 \) than individuals who do not have learning differences \( M = 2.23, SD = 0.48 \), \( t(108) = -4.44, p < .001 \).

For both the evaluative and the affective GNAT, \( d' \)-difference was regressed on knowledge of learning differences in order to determine whether greater reported knowledge of learning differences could predict lower negative implicit bias against learning differences. For the evaluative GNAT, a marginally significant regression equation was found, \( F(1, 108) = 2.76, p = .10 \), with an \( R^2 \) of .03. Participants’ \( d' \)-difference is equal to \(-0.75 + 0.23(\text{knowledge of learning differences})\). In other words, participants’ \( d' \)-difference increased 0.23 points for each increase of 1 on the 1-4 scale of reported knowledge of learning differences. For the affective GNAT, there was no significant regression equation.

A simple linear regression was conducted in order to determine whether reported knowledge of learning differences could predict scores on the three-item explicit stigma scale. A statistically significant regression equation was found, \( F(1, 107) = 3.94, p = .05 \), with an \( R^2 \) of .04. Participants’ explicit stigma scores are equal to \( 3.12 - 0.38(\text{knowledge of learning differences}) \). In other words, participants’ explicit stigma scores decreased 0.38 points for each increase of 1 on the 1-4 scale of reported knowledge of learning differences.
Sources of Knowledge About Learning Differences

When asked to indicate all of their primary sources of knowledge about learning differences, participants reported 3.26 sources ($SD = 1.30$) on average. The most commonly reported sources of knowledge were peers with learning differences (77.27%); the media, such as newspapers, television and music (60%); family members (47.27%); academic classes at Bates (40%); and doctors/therapists (31.82%). When academic classes pre-Bates, academic classes at Bates, and academic journals/articles were grouped together into a general “academic sources” category, there were $N = 44$ people (40%) who reported having academic sources of knowledge. Analyses of the relationship between sources of knowledge and implicit bias and explicit stigma were focused on academic sources and peers with learning differences in order to determine whether peer or academic education might impact stigma against learning differences.

A one-way ANOVA was conducted to determine if explicit stigma could be predicted by whether participants reported academic sources, peers with learning differences, both, or neither, as primary sources of knowledge about learning differences. Knowledge source significantly predicted explicit stigma scale scores, $F(3, 105) = 4.29, p = .007$. Post hoc comparisons using the Tukey’s HSD revealed that the only significant difference was that participants who listed peers with learning differences as their only sources of knowledge had significantly higher explicit stigma scale scores ($M = 2.67, SD = 1.25$) than participants who listed both peers with learning differences and academic sources ($M = 1.86, SD = 1.05$), $p = .006$.

Independent samples $t$-tests were conducted to determine whether the knowledge source binaries of peers with learning differences or not, and academic sources or not, could predict explicit stigma scale scores. There was no significant difference in explicit stigma scale scores
between participants who listed peers with learning differences as primary sources of learning difference knowledge ($M = 2.16$, $SD = 1.19$) and participants who did not ($M = 2.39$, $SD = 0.84$). However, participants who listed academic sources as primary sources of knowledge about learning differences had significantly lower explicit stigma scale scores ($M = 2.00$, $SD = 1.05$) than participants who did not ($M = 2.54$, $SD = 1.17$), $t(107) = 2.46$, $p = .016$.

One-way ANOVAs were also conducted to determine whether primary sources of knowledge of learning differences could predict $d'$-differences for the evaluative and affective GNATs. There were no significant $d'$-difference between sources of knowledge for the evaluative GNAT, or the affective GNAT.
Study 2 Discussion

The purpose of this study was to determine whether Bates students demonstrated a negative implicit bias against learning differences. The main hypothesis that participants would show a stronger negative-learning differences association than a positive-learning differences association was supported for both the affective and the evaluative GNATs. In addition to completing the implicit tests, participants reported on their knowledge and primary sources of knowledge about learning differences, and responded to three items designed to measure explicit stigma. Together, the results from this study support the development and implementation of a peer education program that would address the negative discourse around learning differences.

GNAT Analysis

The main hypothesis for this study was that participants would have stronger associations between learning differences and the negative valence categories than between learning differences and the positive valence categories. That initial hypothesis was supported by both GNATs, which means on the first known implicit tests of this specific topic, participants demonstrated significant negative implicit bias against learning differences. These results support Wilson and Scior’s (2014) findings that people show negative implicit bias against disabilities, and systematically demonstrate May and Stone’s (2010) findings about stereotypes against learning differences on a college campus. Furthermore, the implicit bias found in this study serves as evidence of a negative stereotype related to learning differences. As evidenced by studies on stereotype threat, negative stereotypes can negatively impact stigmatized individuals’ self-esteem (Crocker & Major, 1989), academic performance (Steele & Aronson, 1997), subsequent transfer of skills (Boucher et al., 2011), and intentions to improve (Fogliati &
Future research on this topic should examine the relationship between degree of implicit bias, self-esteem, and academic self-efficacy for individuals with learning differences to determine whether the GNATs measure internalization of negative stereotypes about learning differences.

Since the evaluative terms were directly related to competency—a key facet of perceived stigma discussed during Study 1—it was additionally predicted for Study 2 that participants would show a greater difference between negative and positive associations on the evaluative than the affective GNAT. Contrary to that initial hypothesis, though, that relationship was stronger for the affective than the evaluative GNAT. For the evaluative GNAT, the learning difference terms referred to diagnoses and accommodations, while the competency-based negative and positive valence terms were most directly related to people. Participants in Study 1 seemed to differentiate between three subdivisions of the learning difference category: diagnoses, accommodations, and people with learning differences. Specifically, perceived stigma was directed primarily towards diagnoses and the accommodations they warrant, rather than towards the individuals who have them. Notably, While Greenwald and Farnham (2000) found no significant difference in strength of positive and negative associations between their evaluative and affective self-esteem IATs, the smaller positive/negative evaluative GNAT difference than the affective difference could suggest (and confirm from Study 1) that there is less stigma against people with learning differences than towards learning difference diagnoses and accommodations.

It is possible that statistically significant negative implicit bias alone does not mean individuals personally hold negative views or act negatively towards individuals in the stigmatized group. In their review of studies that have used the IAT to measure attitudes towards
individuals with disabilities, Wilson and Scior (2014) found that paid caregivers of individuals with intellectual disabilities (formerly referred to as mental retardation) demonstrated negative implicit attitudes. This means that even people with theoretically good intentions and positive explicit attitudes can still show negative implicit attitudes. Therefore, the significant results found in this study should not be taken as a definite sign that students at Bates necessarily personally view learning differences negatively, but rather as an opportunity to open the conversation about learning differences and perceived stigma on campus.

Analyses for the current study included comparisons between degree of negative implicit bias and self reports of explicit stigma, knowledge of learning differences, and sources of knowledge about learning differences. However, self-reports cannot always be equated with actions, and there were no behavioral observations of participants in this study that could serve as bases of comparison for implicit bias. For future research, it would be interesting to develop a measure of enacted discrimination against individuals with learning differences. One behavioral component that could provide a potential point of comparison is pronoun usage, similar to what was analyzed during Study 1. It would be interesting to see whether language usage is related to implicit stigma, and whether language is therefore a somewhat explicit manifestation of implicit stigma.

**Implicit Tests and Explicit Attitudes**

When it comes to tests of implicit attitudes such as the IAT and GNAT, it is important to consider what implicit attitudes are and what they implicate. Karpinski and Hilton (2001) have proposed an environmental association interpretation of the IAT. For the current study, that would suggest that individuals have been exposed to a greater number of negative-learning
difference associations than positive-learning difference associations. With an IAT on apples and candy bars, Karpinski and Hilton found over 90% of participants had more positive implicit associations with apples than candy bars, even though explicit attitudes and the actions of choosing an apple or candy bar showed a greater degree of individual variation in preferences between apples and candy bars than indicated by implicit attitudes. When they used a youth-elderly IAT and manipulated whether participants were primed with elderly-good pairings or youth-good pairings after completing a baseline IAT, they found that exposure to elderly-good pairings significantly decreased participants’ negative implicit bias against elderly compared to baseline measures. The conclusion drawn from their studies was that “IAT scores may reveal little about a person’s beliefs and much about his or her environment or culture” (Karpinski & Hilton, 2001, p. 786).

For the current study, a main conclusion drawn from the Study 1 focus group analysis was that students overall are cognizant of a perceived stigma on campus. Karpinski and Hilton’s (2001) research suggests that the significant negative implicit bias against learning differences found through the GNATs could be a result of exposure to the negative discourse around learning differences, and not necessarily indicative of students feeling personally negatively towards learning differences. That could explain why participants with learning differences in Study 2 demonstrated the same degree of negative implicit bias as participants without learning differences. At a minimum, this study shows that students at Bates are exposed to a significant amount of negative associations with learning differences, which is something that should be addressed. The degree of negative implicit bias against learning differences found in the current study could therefore serve as a basis of comparison for Bates should the college decide to implement some kind of peer education or stigma intervention program.
In an effort to “decontaminate” the IAT from extrapersonal, social associations, Olson and Fazio (2004) developed a personalized IAT. Since IATs (and GNATs) traditionally tell participants to pair a target category with either positive or negative terms and give participants feedback as they complete the task, IATs are designed to suggest normatively correct responses. For the personalized IAT, Olson and Fazio used comparison terms that were pretested as having no normative positive or negative value, and that had a large degree of variability in how they were valued (e.g. coffee, football). Participants were asked to categorize the comparison terms by one key labeled “I like” and one key labeled “I don’t like”, and had the target category share a response key with either the “I like” or “I don’t like” keys. The element of feedback was also eliminated. For racial attitudes, Olson and Fazio found that participants displayed less negativity towards Blacks on the personalized than the traditional IAT. When they replicated and expanded upon Karpinski and Hilton’s (2001) apple-candy bar study, Olson and Fazio found that the personalized IAT suggested no clear overall preference for apples over candy bars even though that is what the traditional IAT showed.

The personalized IAT also correlated more strongly than the traditional IAT with explicit preferences, past eating behaviors, and behavioral intentions. This supports Karpinski and Hilton’s (2001) environmental association model, and the idea that traditional IATs (and GNATs for that matter) tap into easily accessed information about a target category. After the conclusion of this study, it became apparent that a personalized GNAT might be beneficial for examining implicit attitudes towards learning differences. It would therefore be worthwhile to develop a personalized learning difference GNAT to see whether that could predict explicit stigma or discrimination against learning differences, and to see whether participants with and without learning differences show different degrees of negative implicit bias on that measure.
Explicit Stigma

Overall, participants reported low levels of explicit stigma, as evidenced by their average scores that were significantly below the midpoint of the explicit stigma scale score. The relatively low levels of explicit stigma found in the current study do not necessarily mean students at Bates truly view learning differences and people with learning differences positively and free from negative bias, though. As a result of social desirability, it is possible that participants wanted to respond to the explicit stigma items how they thought they should respond, rather than responding with how they actually felt. It is therefore not possible to conclude whether the explicit stigma scale is a valid measurement of stigma. Although participants without learning differences had, on average, higher explicit stigma scale scores than participants with learning differences, that significant difference was driven primarily by the third scale item addressing fairness of accommodations. Specifically, participants without learning differences agreed to a significantly greater degree with the statement, “Accommodations (such as extra time on exams) are unfair” than participants with learning differences. That is one disagreement that could be directly addressed through education that perhaps incorporates an explanation and anecdotes about why accommodations are necessary for students with learning differences.

Wilson and Scior (2014), found that explicit attitudes towards disabilities have become less negative over time, which they attribute to advocacy and education. Since the numbers of students with learning differences attending higher education institutions has been increasing recently (e.g. Astin et al., 1983; Pryor et al., 2012)—which could reduce stigma through increased exposure—the relatively low degree of explicit stigma reported in the current study could be a result of Wilson and Scior’s proposed trend. Yet if the rate of students with learning
differences is increasing without a parallel increase of education about learning differences or advocacy on college campuses, that claim about reduced explicit stigma against disabilities over time (Wilson & Scior) may not extend to the realm of learning differences in higher education.

Knowledge of Learning Differences

While self-reported knowledge of a subject does not always correlate with actual knowledge, the fact that participants with learning differences reported significantly greater knowledge about learning differences than participants without learning differences suggests that the self-report could be a valid indicator of knowledge at least relatively speaking, since individuals with learning differences should be more knowledgeable on the topic than individuals without learning differences. For future research, an actual test of knowledge about learning differences would be a helpful measure to include and use as a source of potential comparison to implicit and explicit attitudes towards learning differences. The significant regression of explicit stigma scale scores on reported knowledge of learning differences showed that as knowledge increased, explicit stigma scale scores decreased. That fits with Wilson and Scior’s (2014) suggestion that education has contributed to the decrease in explicit stigma against disabilities over time, and is support for the development and implementation of a program to educate college students about learning differences and accommodations.

Regarding implicit bias against learning differences, knowledge of learning differences did not significantly predict negative implicit bias for the affective GNAT. For the evaluative GNAT, however, knowledge marginally predicted negative implicit bias, with negative implicit bias increasing as knowledge increased. This study should be replicated with personalized GNATs to examine this relationship more closely, since the discovered relationship goes in the
opposite direction than would be expected given the decrease in explicit stigma that was predicted by an increase in knowledge. It is also interesting that the relationship only existed for the evaluative and not the affective GNAT, since negative implicit bias was greater for the affective test, although the discovered relationship only reached marginal significance.

*Sources of Knowledge*

An examination of the relationship between sources of knowledge about learning differences and explicit stigma scale scores revealed that participants who listed both academic sources and peers with learning differences had significantly lower explicit stigma scale scores than participants who only reported peers with learning differences as a primary source. In Study 1, participants without learning differences talked about peers with learning differences as giving them a “reason to care,” so it is possible that peers with learning differences evoke or promote empathy, while academic sources cultivate knowledge of learning differences.

Olapegba (2010) examined the influence of empathy, knowledge, and personal distress in regards to HIV/AIDS discrimination in Nigeria. He found that all three components had a significant contribution on both stigmatization (negative associations with a person or group) and discrimination (unjust treatment based on group membership). More specifically, higher empathy and knowledge of HIV/AIDS were related to lower expressed stigmatization. While previous studies had suggested higher personal distress might be correlated with higher stigmatization, Olapegba found that personal distress was positively correlated with empathetic concern, and ultimately negatively correlated with stigmatization. Together, these results suggest that increasing knowledge, tapping into empathy, and appealing to reasons for emotional investment
(a more positive conception of personal distress) should all be considered as aspects of a successful intervention or educational program to address stigma and discrimination.

**Reasons for Not Disclosing**

Stigma against learning differences can be conceptualized as both concealable, since learning differences are not necessarily apparent without disclosure, and ability-related, since learning differences are directly applicable to performance in an academic setting. According to Major and O’Brien (2005), ability-stigmatized individuals can be stereotype threatened by taking diagnostic tests, being outnumbered by individuals outside the stigmatized group, and being asked to reveal concealable stigma. Disclosing learning difference status is therefore an event that could serve as a stressor for individuals in higher education and deserves further attention.

For the seven participants with learning differences who have chosen to not disclose to Bates or utilize accommodations, the most common open-ended explanations for not doing so were a lack of need or desire to do so. Only one participant explicitly mentioned embarrassment as a reason for not disclosing, contrary to Denhart’s (2008) finding that students with learning differences were foregoing their accommodations for fear of stigma. A few participants elaborated on the “lack of need” to mean they feel as though they are strong enough students to compensate for their learning difference(s) without accommodations, which could inadvertently be suggesting that taking accommodations is perceived—at least by those participants—to be seen as a sign of weakness. It would be beneficial to hear from more students with diagnosed learning differences who have not disclosed that status to Bates, since it is possible that there are students who have not disclosed and who were fearful of participating in this kind of study for similar reasons that Denhart found for avoiding using accommodations. When this study was
being advertised to the entire student body, it was made explicitly clear that responses would be anonymous, that students with and without learning differences were encouraged with participate, and that an individual’s learning difference status would not be disclosed to anyone or known by the experimenter. Students who have disclosed their learning differences to Bates were sent a blind-copy email by Dean Gurney laying out information about this study and encouraging them to participate if they were interested, but there was no way to specifically convey that information directly to students with learning differences who have not disclosed their learning difference status to Bates.

Limitations

One limitation of the current study is the low number of participants with diagnosed learning differences, \( N = 31 \), compared to the number of participants without diagnosed learning differences, \( N = 79 \). With more participants overall, comparisons could be made between individuals with diagnosed learning differences, individuals who believe they may have an untested learning difference, and participants who neither have a diagnosed learning difference nor believe they have an untested learning differences. Furthermore, Study 1 data analysis revealed that different diagnoses were viewed differently from one another (e.g. dyslexia was viewed as more legitimized than ADHD). More participants would therefore allow for within-groups comparisons for individuals with different diagnoses and combinations of diagnoses since eight of the 31 individuals with diagnosed learning differences had various combinations of comorbid learning differences.

A potential limitation of this study given Study 1 results is that the GNATs combined diagnoses and accommodations into one general learning difference category. That was done
intentionally since we were unable to come up with the minimum of four relatively short words per category to test implicit attitudes towards diagnoses, accommodations, and individuals with learning differences separately. That separation would be interesting to examine for future research, since one conclusion of Study 1 was that those three components of the learning difference category may be viewed differently. Additionally, results from Study 1 suggested that different diagnoses may be viewed differently (e.g. dyslexia may be more legitimized than ADD/ADHD). In order to determine whether people implicitly demonstrate that explicit claim of varying legitimization, designing separate ADHD and dyslexia GNATs would be worth pursuing in future research. Splitting up the learning difference target category by diagnosis was considered for this study, but kept as one since that is how the discourse currently functions at Bates, because different diagnoses do have overlaps in terms of accommodations, and because of comorbidity and sample size issues.

For the affective GNAT, participants were significantly faster at correctly responding to negative-learning difference trials than positive-learning difference trials, but there was no significant difference in reaction time for the evaluative GNAT. Williams and Kaufman (2012) claim that response latency is not an appropriate measure of GNAT effects since GNATs are designed to artificially truncate response times with the necessary implementation of a response window. Nosek and Banaji (2001), however, claim that both reaction time and $d'$ scores are appropriate measures of GNAT effects. For their response latency-based GNAT study, though, Nosek and Banaji elongated their response windows for participants. In order to obtain more reliable reaction time measures, it would therefore be beneficial for future research on learning difference GNATs to include blocks with elongated response windows so there is not a tradeoff of response time for accuracy, which is necessary for Signal Detection Theory analysis.
For a broader understanding of explicit stigma, a larger (i.e. greater than three items) scale of explicit stigma against learning differences should be pilot tested and implemented. Here it may also be useful to ask questions differentially about different diagnoses and accommodations. While participants may still be reluctant to share explicit stigma against learning differences, there may be useful information gleaned if there are different levels of explicit stigma reported for different diagnoses, for example, even if overall explicit stigma is still low. Another, less direct, means to predicting explicit stigma could be through a test of knowledge about learning differences. Since Murman et al.’s (2014) and Olapegba’s (2010) studies found that higher knowledge is correlated with lower stigma for mental illness and HIV/AIDS respectively, it may be possible to use level of actual knowledge (as opposed to reported knowledge) as an indirect correlate of stigma when trying to discern stigma against a socially sensitive topic.

Conclusion and Future Directions

The aim of this study was to determine whether there was a negative implicit bias against learning differences among students at Bates College. Participants demonstrated a negative implicit bias against learning differences, regardless of their learning difference status. Since a negative implicit bias demonstrated through a traditional GNAT may be confounded by environmental associations and not completely indicative of personally held negative implicit bias, follow up studies should be conducted with personalized GNATs to determine the extent to which individuals associate the learning difference category with concepts and items they personally like and do not like.
Even though traditional GNATs may not be indicative of personally held negative implicit bias, they should still be a point of concern. At the very least, a negative implicit bias found through a traditional GNAT suggests that participants have been exposed to negative discourse around the learning difference category. Ultimately, it is advisable that Bates implements an educational program to help eliminate and prevent further stigma against learning differences and to better support students with learning differences. The potential design for such a program will be discussed in the General Discussion.
General Discussion

Through these two studies, it is apparent that there is a negative implicit bias against learning differences present at Bates College. Study 1 employed a qualitative approach to gain an understanding of how learning differences and accommodations are conceptualized and regarded by current students. Study 2 took a quantitative approach to investigate whether Bates students demonstrated a negative implicit bias against learning differences. Together, a perceived stigma against learning differences was expressed by students both with and without learning differences during the Study 1 focus groups, and the existence of at least an environmental negative association with learning differences was found in Study 2.

While it is tempting to say that the significant effects found in Study 2 show that participants are displaying a negative bias against learning differences that participants were unwilling to explicitly vocalize, that would be an oversimplification of students’ mentalities. Since participants with diagnosed learning differences showed lower levels of explicit stigma but the same levels of negative implicit bias against learning differences as their non-LD peers on both GNATs, it is only possible to definitively say that students in general at Bates have been exposed to greater negative-learning difference associations than positive-learning difference associations. While some individuals may actively view learning differences, accommodations, or individuals with diagnosed learning differences negatively, that cannot be undeniably confirmed through the implicit or explicit tests used in Study 2. That does not mean the results should be disregarded, though. At a minimum, they demonstrate that the discourse around learning differences is more negative than positive.
The Learning Difference Experience

Through their 20-year longitudinal study of 41 individuals with learning differences, Higgins, Raskind, Goldberg and Herman (2002) came up with a five-stage model of acceptance of learning difference labels: awareness of a difference, the labeling event, understanding/negotiating the label, compartmentalization (minimizing weaknesses and maximizing strengths), and transformation. While this is not meant to be a linear model, they noted that only a few of the most successful participants achieved the transformation stage which corresponds to individuals who accept their learning difference as a positive force in their lives. While it is possible that stage might have to happen once people are out of school—the direct context with which learning differences are often associated—that does not mean those students’ social and emotional needs should go unmet or under-met through college. Higgins et al.’s final recommendations include “implementing peer support groups, developing mentoring programs and the like, as well as strengthening disability awareness curricula and transition services to include consideration of the notion of acceptance of a disability and of persons with disabilities, as well as the labeling process and its consequences” (Higgins et al., 2002, p. 16).

Under a restructuring plan for the Dean of Students Office that will go into effect in Fall 2015, a new Associate Dean of Accessible Education will be hired, who will "ensure [Bates] coordinates our academic support services for students with learning disabilities" (J. McIntosh, personal communication, February 23, 2015). As the Dean of Students Office at Bates undergoes reorganization, language used for the more formal support resources and the general discourse about differences at Bates should be taken into account. Currently, reading, writing, and math learning disorders, Attention Deficit/Hyperactivity Disorder, psychoemotional disorders, auditory, visual and sensory motor disorders, and temporary medical issues such as concussions
are all bucketed together under the label of “learning differences”—the term explicitly preferred by participants in Study 1. Higgins et al. (2002) note that stage three of their model, understanding/negotiating the label, stems from the interpretation that individuals were trying to “choose the least stigmatizing label…while still getting the maximum amount of one-on-one or small-group tutoring from service providers” (Higgins et al., 2002, p. 12). That idea lines up with the finding from Study 1 that participants with diagnoses vocalized a preference for the term “learning difference” since it has less negative connotations, yet they used the phrase “learning disability”—which is potentially more legitimizing—with greater frequency when talking about their experiences.

*Education to Combat Stigma*

Through this study and others, it becomes evident that more can be done to better support students with learning differences in higher education, and to better prepare their peers to combat stigma. In order to measure the effectiveness of a peer intervention that addressed stigma, Murman et al. (2014) evaluated an adolescent-led group initiative to reduce mental illness stigma, Let’s Erase the Stigma (LETS), which they predicted would increase empathy but not necessarily knowledge in regards to mental illness. Murman and her colleagues proposed that “open and discursive” (Murman et al., p. 624) approaches aimed at fostering personal connections are beneficial because they can increase group identification and social support, which are components of Major and O’Brien’s (2005) avenues for stigmatized individuals’ buffer against decreases in self-esteem. Ultimately, LETS appeared to combine empathy and knowledge to help reduce stigma through peer-directed education and exposure. That aligns with the Study 2 results demonstrating less explicit stigma for participants who reported learning from
peers with learning differences and academic sources than for participants who only reported peers with learning differences as sources of knowledge of learning differences.

A cornerstone of the LETS program was the sharing of personal stories about stigma-related struggles, through guest speakers and stories submitted anonymously by participants. In their analyses of quantitative scales after the program ended, Murman et al. (2014) found that LETS participants scored significantly higher than their non-LETS counterparts on scales of attitudes, positive actions, and knowledge about mental illnesses, while scoring lower than non-LETS participants on the social distance scale. Together, these results suggest that the LETS program was successful in promoting better attitudes, more positive actions performed regarding stigma, increased knowledge, and less social distancing related to mental illness. Murman and her colleagues differentiate LETS from traditional educational methods by defining the program as “a multidimensional experiential strategy that incorporates mutual peer-to-peer interactions within a context that promotes shared discussions of ‘difference’” (Murman et al., 2014, p. 632). While they did not expect a change in knowledge, participants did in fact demonstrate increased knowledge after completion of the program, suggesting that participants were able to effectively learn from their peers and guest speakers in a less conventional way than traditional educational programs. The participants for this program were all in high school at the time of participation, which means the program may have to be revisited and adapted if it were to be implemented in a higher education setting, yet LETS could be a promising foundation for promoting understanding of learning differences and other individual differences. As Bates moves towards a more streamlined model of disability services to better support students with learning differences, psychological disorders and physical disabilities, an adaptation of LETS addressing
“differences” broadly defined might be the most relevant and successful, especially to avoid alienating any students with less commonly occurring differences or disabilities.

As evidenced by LETS, increased empathy and knowledge through the program were correlated with decreased stigma (Murman et al., 2014). Given the lack of knowledge around learning differences and knowledge of resources available on campus expressed by participants without learning differences in Study 1, an educational program seems like appropriate early step to addressing the negative associations with learning differences that were confirmed through Study 2. Furthermore, regression analysis for Study 2 revealed that as reported knowledge of learning differences increased, explicit stigma scale scores decreased. Since participants in Study 2 who listed both academic sources and peers with learning differences as primary sources of knowledge about learning differences had lower explicit stigma scale scores than participants who only listed peers with learning differences, a formalized educational program that includes hard facts but is rooted in students sharing their personal experiences seems like the most effective mode of combatting stigma and negative associations.

While the LETS model (Murman et al., 2014) seems like a good starting point, it is important to consider what effective components of an educational or stigma-fighting model might look like. In a study of what they call a “brief intervention” to reduce HIV stigma among nursing students in India, Shah, Heylen, Srinivasan, Perumpil and Ekstrand (2014) employed a two-session model. The first session addressed instrumental stigma (which stems from fears about misconceptions about HIV transmission) by attempting to increase factual knowledge and debunk myths about HIV transmission. The second session addressed symbolic stigma (pre-existing negative attitudes towards marginalized groups) by having a guest presenter who was HIV-positive talk about his experiences with the infection and stigma, and answer questions
from the students. Although not all the results were statistically significant, students who received the intervention had more positive views towards HIV and showed less intent to discriminate than the control group of students. The researchers recognized that a larger sample size and more time would have been beneficial to moving beyond this pilot-type study, yet the results are encouraging, and suggest that a combination of factual education and exposure to stigmatized individuals and their stories may be effective.

Interventions addressing stigma that combine contact and education have been effective with consumers and providers of mental health services. Michaels et al. (2013) reviewed the Anti-Stigma Project workshop in Maryland, which educated participants about stigma in small group settings, asked participants to share experiences of stigma with partners, and presented participants with a video chronicling mental health and related stigma experiences by patients, providers, and families. They found that the program increased awareness of stigma and lowered stigmatizing attitudes for both patients and providers compared to those in the control groups. Michaels et al.’s final recommendation is that groups seeking to combat stigma should consult the stigmatized individuals for a collaborative, bottom-up approach.

In order to combat stigma against epilepsy, the Institute of Medicine (IOM) committee developed a plan for raising public awareness about epilepsy and informing the media (England, Austin, Beck, Escoffery, & Hesdorffer, 2014). As a part of this endeavor, they developed eight key messages to be widely used in future public awareness and education campaigns. These sentence-long messages include facts about incidence, severity, treatment, and social ramifications of stigma. A parallel for combatting negative bias against learning differences in higher education would be to converse with students who have diagnosed learning differences to
develop core knowledge items and a plan for how they would like to see how those messages disseminated.

According to Lindsey (1997), peer education should be carefully considered before being resorted to as the default for providing college students with health education. She reports that through communication research, it is evident that perceived credibility of an educator is important for how effectively they can influence attitudinal or behavioral changes. Her concern is that students are not trained to the same extent as professionals, and should therefore not be taken as an absolute substitute. Rather, she suggests that “in the best of worlds, [students] will become ambassadors and allies” (Lindsey, 1997, p. 189). For addressing negative discourse around learning differences, students with diagnosed learning differences will have a level of credibility since they know firsthand what that experience is like. A partnership with a more formal collegiate entity, such as the Dean of Students Office, could result in a professional, yet student-driven, program that incorporates education and emotional understanding.

Conclusion and Future Directions

These two studies aimed to gain an understanding of how learning differences, accommodations, and individuals with learning differences were viewed, and to develop and implement a systematic measure of stigma against learning differences. Since Wilson and Scior (2014) found that across three IAT studies, caregivers demonstrated negative implicit biases against people with intellectual disabilities (IDs), it would be worthwhile to test professors’ levels of implicit bias against learning differences as well. That would determine whether they show the same negative implicit bias against learning differences demonstrated by students, and whether they show the same level of negative implicit bias against learning differences as
intellectual disability caregivers showed against IDs. Future studies on this topic with college students should include measures of illicit ADHD medication use, and attitudes towards illicit ADHD medication use. That would allow for comparisons to the rates of illicit use found by DeSantis et al. (2008). Furthermore, analyses could be conducted to determine whether illicit ADHD medication use or attitudes towards illicit ADHD medication use can predict levels of negative implicit bias against learning differences.

For additional work on implicit attitudes around learning differences, there are a number of potential future studies that could be conducted. In Study 1, there was an apparent distinction between participants with learning difference who seemed to equate learning differences with the associated challenges or diagnostic criteria, and participants without learning differences who seemed to equate learning differences with accommodations. A GNAT testing whether people associate learning differences more with challenges (e.g. slower processing speed) or with accommodations (e.g. extra time) could potentially show those Study 1 findings in a systematic way. Additionally, a GNAT testing learning difference association with the self versus non-self could provide telling insight into how strongly students with learning differences identify with the learning difference category.

The confirmation of negative biases against learning differences—reported as perceived in Study 1 and systematically demonstrated with GNATs in Study 2—is important because of the negative implications that stereotype and stigma can have on members of a stigmatized group. Stereotype threat has been shown to negatively impact academic performance (Steele & Aronson, 1997), subsequent transfer of skills (Boucher et al., 2011), and intentions to improve (Fogliati & Bussey, 2013). Furthermore, individuals do not need to necessarily identify with or internalize a stereotype for it to have detrimental effects (Steele, 1997). In addition, stigma can
especially harm self-esteem for individuals for whom group identification is not easily accessible (Crocker & Major, 1989), which is relevant to concealable learning differences. All in all, the perceived stigma and proven negative implicit bias against learning differences found through these studies should be a point of concern for higher education establishments seeking to best support all of their students.

Through these two studies, it is evident that there are negative attitudes around learning differences present among college students and measures should be taken to address these issues. Personalized GNATs should be developed to further understand negative implicit bias against learning differences. Follow-up work should be conducted to develop and implement programs for educating students about learning differences, and to better support students who have diagnosed learning differences.
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Study 1 Recruitment Text

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Study 2 LD Recruiting Text

Appendix B

Focus Group Questions

Appendix C

Study 1 Consent Form

Study 2 Consent Form

Appendix D
Demographic Information Form—Study 1 & Study 2

Appendix E

Study 1 Thank You / Debriefing Sheet
Study 2 Thank You / Debriefing Sheet
Contact Information—Study 1 & Study 2

Appendix F

Learning Difference Terms (pretested with N = 25 students at Bates College)
Affective Terms (taken from Greenwald, McGhee, & Schwartz, 1998)
Evaluative Terms (taken from Greenwald & Farnham, 2000)

Appendix G

Items Measuring Explicit Stigma (α = .73)
Table 1—Study 1 Pronoun Usage

Table 1. Each column contains the percentages of pronoun/noun usage in reference to a group. Terms were only included when referencing groups of people, so the usage of “I” was not included in the total count. “NLD” refers to people who do not have learning differences, and “LD” refers to people to do have learning differences. The column “NLD Refer to LD,” for example, has the percentages of pronoun use that participants without learning differences used in reference to people with learning differences.

<table>
<thead>
<tr>
<th>Percentages</th>
<th>NLD Refer to LD</th>
<th>NLD Refer to NLD/General</th>
<th>LD refer to LD</th>
<th>LD refer to NLD/General</th>
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<td>0</td>
<td>0</td>
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</tr>
<tr>
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<td>0</td>
<td>1.36</td>
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<tr>
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<td>1.14</td>
<td>0</td>
<td>0.68</td>
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<td>0</td>
<td>9.41</td>
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<tr>
<td>peers</td>
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<td>0</td>
<td>0</td>
<td>4.76</td>
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<td>8.24</td>
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<tr>
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<td>4.39</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>someone</td>
<td>9.65</td>
<td>3.41</td>
<td>1.18</td>
<td>1.36</td>
</tr>
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<td>1.14</td>
<td>1.18</td>
<td>0.68</td>
</tr>
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<td>7.95</td>
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<td>14.29</td>
</tr>
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<td>5.68</td>
<td>29.41</td>
<td>0.68</td>
</tr>
<tr>
<td>you</td>
<td>21.05</td>
<td>19.32</td>
<td>43.53</td>
<td>4.08</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
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</table>
Table 2—Study 1 Grounded Theory Method Analysis for Participants with Learning Differences

Table 2. For participants with learning differences (Focus Groups 1 & 2), analysis of the data using Grounded Theory Method resulted in three broad categories—language, peer and self-perceptions, and experiences with learning differences.

I. Language—Terms defined, preferred, and used by participants
   a. Terms: Difference vs. Disability vs. Disorder
      i. Language preferences & connotations—Participants reported that the three terms each had different meanings and connotations; “Difference” was the generally preferred term
      ii. Language use—Participants primarily used the term “learning disability” when discussing learning differences

II. Peer & Self-Perceptions—How participants perceive their peers, and perceive and describe themselves
   a. Perceptions of Peers
      i. Different speeds—Participants perceived their peers to be moving faster academically
      ii. Working the system—Participants talked about peers getting (or trying to get) accommodations that they perceive as not actually necessary
   b. Self-Perceptions
      i. Self-perceptions and assertions
1. Difficulty—Participants described themselves in terms of the difficulties they face related to their learning differences

2. Normalcy—Participants also asserted their normalcy and intelligence

ii. How participants believe they’re perceived by their peers

1. Misunderstood—Participants felt misunderstood by their peers and thought they were perceived peers as either overachieving for how much time and effort they have to put into their academics, or lucky, lazy, or working the system because of accommodations.

2. Diagnosis and specifics matter—Participants felt as though different diagnoses and accommodations were perceived and legitimizied/delegitimizied differently by peers such that dyslexia was more legitimizied than ADHD, medication is legitimizied more than extra time, and depression medication is legitimizied more than ADHD medication.

III. Experience with Learning Differences—Past versus current experiences with learning differences, when and which learning differences are salient, and how participants address their own learning differences.

a. Past versus current experience

i. At Bates compared to before—Participants reported more positive peer experiences at Bates compared to younger ages and grades
ii. Personal anecdotes—Participants told personal anecdotes about their experiences at Bates in regards to decisions about disclosure of their learning differences, and both times of struggling and succeeding.

b. Salience

i. Context—Participants talked about their learning differences primarily in relation to (and being salient in) academic contexts, but social situations as well.

ii. Specific learning differences—Dyslexia and ADD/ADHD were the two specific learning differences most frequently mentioned by name.

c. Addressing own learning differences

i. Formalized support—Formal support and resources at Bates that were discussed included professors, deans, Lane Hall, and accommodations. Participants recognized a lack of formalized peer support and welcomed the idea of introducing such a program.

ii. Coping strategies—Participants talked about ways they actively make decisions and cope with their learning differences, including personal studying strategies, being intentional about medication use or non-use, and self-advocating.
Table 3—Study 1 Grounded Theory Method Analysis for Participants without Learning Differences

For participants without learning differences (Focus Groups 3, 4, & 5), analysis of the data using Grounded Theory Method resulted in three broad categories—basic knowledge, experiences with learning differences, and peer perceptions.

I. Basic Knowledge—Language definitions and usage, and knowledge of learning differences and accommodations.
   a. Terms: Learning Disability vs. Difference vs. Disorder
      i. Meanings and implications—Participants felt the three terms had different connotations and implications for encouraging or closing off conversation.
      ii. Language used—Participants did not use the three terms very frequently, but instead referred to learning differences most often in terms of the diagnosis or accommodations associated with that learning difference.
   b. Knowledge of learning differences and accommodations
      i. Difficulty—Participants’ knowledge of learning difference was primarily focused on the difficulties associated with having a learning difference, and the need for different academic approaches.
      ii. Resources—Participants felt as though there were resources available for students with learning differences but reported not being very knowledgeable about the resources themselves.
II. Experience with Learning Differences—When and why participants report noticing learning differences, and personal relevance and experience with learning differences.

a. When and why learning differences are noticed

i. Difficulty, accommodations and diagnosis—Learning differences were noticed when participants perceived their peers to be struggling academically or utilizing accommodations. The most frequently referenced learning differences were ADD/ADHD and dyslexia.

ii. Bates vs. before—Participants made comparisons between how learning differences are perceived at Bates versus in middle school and high school, and they reported a perceived lack of stigma at Bates.

b. Personal relevance and experience

i. Family and friends—Participants talked about family members and friends with learning differences and learning about them through those people.

ii. Out of sight, out of mind—Participants reported feeling as though learning differences were not commonly discussed at Bates, and that they were really only relevant to people who have diagnoses.

iii. Personal difficulties—Some participants discussed times at which they had wondered whether they themselves had a learning difference or a need for accommodations.

III. Peer Perceptions

a. Perceptions of learning differences and accommodations
i. Difficulty—Participants perceived learning differences to be something difficult for their peers to deal with.

ii. Commonality—Both diagnoses and accommodations were perceived as relatively common.

iii. Diagnosis and specifics matter—Participants felt as though different diagnoses and accommodations were perceived and legitimimized/delegitimized differently by peers such that depression was more legitimimized than ADHD and that medication was an indicator of something more severe.

b. Perceptions of peers without learning differences

i. Misunderstanding and delegitimizing—Participants perceived that their peers without learning differences might misunderstand and stigmatize certain accommodations (such as jealousy of extra time), and delegitimize certain diagnoses (such as ADHD) more than others.
Table 4—Study 2 Learning Difference Diagnoses

Table 4. There were 31 participants in Study 2 who identified as having diagnosed learning differences. This table indicates the number of individuals with different diagnoses and combinations of diagnoses in order of greatest to smallest number of individuals. The total number indicated below exceeds the 31 individuals with learning differences because in eight cases of comorbidity, individuals indicated combinations of learning differences (e.g. ADD/ADHD and dyslexia, or ADD/ADHD and a psychological/psychiatric disorder).

<table>
<thead>
<tr>
<th>Learning Difference Diagnosis</th>
<th>Number of Individuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADD/ADHD</td>
<td>18</td>
</tr>
<tr>
<td>Psychological/Psychiatric Disorder</td>
<td>9</td>
</tr>
<tr>
<td>Unknown official name</td>
<td>5</td>
</tr>
<tr>
<td>Dyslexia (reading learning disorder)</td>
<td>3</td>
</tr>
<tr>
<td>Auditory Disorder</td>
<td>2</td>
</tr>
<tr>
<td>Dysgraphia (writing learning disorder)</td>
<td>1</td>
</tr>
<tr>
<td>Dyscalculia (math learning disorder)</td>
<td>1</td>
</tr>
<tr>
<td>Sensory Motor Disorder</td>
<td>1</td>
</tr>
<tr>
<td>Expressive Language Learning Delay</td>
<td>1</td>
</tr>
</tbody>
</table>
Figure 1—Signal Detection Theory Stimulus-Response Matrix

<table>
<thead>
<tr>
<th>Stimulus Alternative (go/no-go)</th>
<th>Response Alternative (go/no-go)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal</td>
<td>Signal (&quot;go&quot;)</td>
</tr>
<tr>
<td>Noise</td>
<td>Noise (&quot;no-go&quot;)</td>
</tr>
<tr>
<td>Hit</td>
<td>Hit</td>
</tr>
<tr>
<td>False Alarm</td>
<td>Correct Rejection</td>
</tr>
<tr>
<td>Miss</td>
<td></td>
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</tbody>
</table>

*Figure 1.* The stimulus-response matrix of a yes-no procedure (adapted from Green & Swets, 1966). In Signal Detection Theory, analysis is limited to hits (correctly responding “go” to signal trials) and false alarms (incorrectly responding “go” to noise trials).
Figure 2—Study 2 Sensitivity Results

Figure 2. Sensitivity \((d')\) is defined as the difference in \(z\)-score between proportion of hits and proportion of false alarms for a given block. When \(d'\) is greater for negative than for positive trials within a GNAT, that means participants are demonstrating a stronger association between negative attributes and the target category, and therefore displaying a negative implicit bias against the target category (which is learning differences for the current study). The mean \(d'\) for negative evaluative trials \((M = 2.12, SD = 0.82)\) was significantly greater than the mean \(d'\) for positive evaluative trials \((M = 1.91, SD = 0.66), t(109) = -2.77, p = .007\). The mean \(d'\) for negative affective trials \((M = 2.65, SD = 0.82)\) was significantly greater than the mean \(d'\) for positive affective trials \((M = 2.15, SD = 0.76), t(109) = -6.18, p < .001\).
Figure 3. Reaction time for correct signal (“go”) trials was analyzed for both the evaluative and the affective GNAT. While there was no significant difference in reaction time for the evaluative GNAT, participants were significantly faster at negative trials ($M = 490.92, SD = 32.45$) than positive trials ($M = 499.33, SD = 37.43$), $t(109) = -2.72, p = .01$. That difference in reaction time means participants displayed a negative implicit bias against learning differences for the affective GNAT based on reaction time.
Appendix A

Study 1 Recruitment Text

Interested in peer perceptions of learning differences?  
Want an open space to talk about the educational environment at Bates?

Sign up for **focus groups** as a part of my Psychology thesis:  
https://docs.google.com/a/bates.edu/forms/d/1kJ8N0VasZ4ksKZGUpORmpZcEST9FiOXEZxMtjIDtwf4/viewform?usp=send_form

**Snacks will be provided!**  
And you can get **0.5 credits** for applicable Psychology classes.

Note: The groups will be separate depending on whether you not you have a diagnosed learning difference.

Thank you for considering this opportunity!

Sincerely,
Megan Lapp

Study 2 General Recruitment Text

Hello,
I am conducting my senior psychology thesis on perceptions of learning differences at Bates and am looking for participants.

Each session takes just **20 minutes**, and upon completion you can either receive **0.5 credits** for applicable psychology courses, or the chance to win a **$25 Forage gift card** or a **$25 Den gift card**!

Please follow the link to pick a time slot:  
http://signupschedule.com/mlapp/

Students with and without learning differences are encouraged to sign up! Your responses will remain anonymous and your learning difference status will not be disclosed (no one will know your learning difference status when you sign up)

Thank you so much for your participation!

Best,
Megan Lapp
Study 2 LD Recruiting Text

Good afternoon,
You are being sent this email, in confidence, by Dean Gurney to see whether you might be willing to participate in a study that contributes to a senior's thesis having to do with learning differences and student disabilities at the college level.

This thesis is authored by Megan Lapp and she needs the participation of both those with and without learning differences. Here is the information she provided about her thesis.

Here's some information on what I'm doing:

For the second phase of my research, I am testing a new method of systematically measuring perceptions of learning differences. I am really excited about this work, but I need a lot of participants (both with and without learning differences) in order to do a good, thorough job on this.

Each session takes approximately 30 minutes, and upon completion students can either receive 0.5 credits for applicable psychology courses, or the chance to win a $25 Forage gift card or a $25 Den gift card! Here is the link to sign up directly. On the psychology department website, it is experiment #10.

In order to protect your confidentiality, I am serving as the conveyer of information for Megan. If you choose to participate, Megan will likewise protect your confidentiality and data will be reported in aggregate, not distinct, individual cases.

I encourage you to support Megan in her ongoing research in the field of learning differences and the ways they are perceived and experienced in our world. If you have further questions, you can send them to me and I will relay them, without your identification attached, to Megan.

Holly L Gurney
Associate Dean of Students
Lane Hall 104
(207)786-6220
Appendix B

Focus Group Questions

General focus group questions

1. What do you think of when you hear, “learning disorder/difference/disability”? 

2. Bates has a number of accommodations for students with learning differences who have proper documentation, such as extended test time, note takers, note taking assistants, speech to text software, audio and visual equipment, and more.
   a. How do you think accommodations are perceived by students at Bates?
   b. How do you think accommodations are perceived by professors at Bates?
   c. Are there certain accommodations that are more stigmatized than others? (e.g., extended test time vs. ADHD medication vs. note takers)

3. Do you think that some learning differences more legitimized or delegitimized by your peers?
   a. Why do you think that is so?

4. What do you think could be done to make a more understanding/welcoming environment for students with learning differences? (e.g., support groups, facts campaign, etc.)

5. Do you find students without learning differences to be understanding of learning differences and the accommodations that go along with them?

6. Bates currently uses the terminology “learning differences” to refer to all students with documented needs for accommodations. Do you think there would be any implications of the college changing the discourse to “learning disabilities”? 
   a. Specifically, would this have an effect on stigma/stereotype on campus?
Focus group questions for participants with learning differences

7. In what situations/circumstances do you think a learning difference most salient to your peers?
   
   a. In what situations/circumstances do you think learning differences are most salient to you?
   
   b. Are they always salient in negative ways? Can salience be positive?

Focus group questions for participants without learning differences

8. In what situations/circumstances do you think learning differences are the most noticeable/relevant?
   
   a. Are they positive, negative or neutral?
Appendix C

Study 1 Consent Form

This consent form was created for use at Bates College (Lewiston, Maine) for a senior psychology thesis, advised by Rebecca Fraser-Thill, a faculty member in the Psychology Department. The purpose of the study you have agreed to complete is to dig deeper into peer and self perceptions of students with learning differences at Bates College. **You will participate in focus groups where we will be asking you various questions regarding issues related to perceptions of students with learning differences.** We will ask questions about the general environment on campus and you will be asked to respond and talk about your answers as a group. We do not anticipate any discomfort or unpleasantness associated with participation.

Your participation in this study is completely voluntary. There will be no record of your name associated with your responses to the questions. Although we cannot guarantee that other discussion participants will not divulge the contents of the conversation, we will direct all participants to maintain confidentiality. Your responses will be recorded, but will only available to the individuals collecting and analyzing the data. The recordings will be destroyed after the data are transcribed and coded. The transcripts will have all identifying information removed and be stored in a password-protected Word document.

**At any time, you may discontinue your participation without penalty and you do not have to answer any questions that you do not feel comfortable answering.** If you have any questions, they will be answered by Megan Lapp, or professor Rebecca Fraser-Thill.

I have read the above information and have been informed of the procedure in this experiment. I understand that I may withdraw from the study at any time without penalty. I
understand that what I am saying is being recorded. By signing the line below, I agree to participate in the study as described above and confirm that I am over 18 years of age and a student at Bates College.

X____________________

Study 2 Consent Form

This consent form was created for use at Bates College (Lewiston, Maine) for a senior psychology thesis, advised by Rebecca Fraser-Thill. The purpose of the study you have agreed to complete is to dig deeper into peer and self-perceptions of students with learning differences at Bates College. You will complete two association tasks, responding to pairs of category terms. You will also be asked to fill out some demographic information about yourself and your knowledge of learning differences. There should be no discomfort or unpleasantness associated with participation.

Please note that, unless you include any identifying information, your responses will be anonymous. In the unlikely event that you choose to identify yourself, your responses will be kept confidential, to the extent permitted by law. You may terminate your participation at any point (without submitting data) if you are uncomfortable continuing. With that said, it would be helpful to us if you completed the study. If you have any questions, they will be answered by Megan Lapp, or professor Rebecca Fraser-Thill.
I have read the above information and have been informed of the procedure in this experiment. I understand that I may withdraw from the study at any time without penalty. By signing the line below, I agree to participate in the study as described above and confirm that I am over 18 years of age and a student at Bates College.

X____________________
Appendix D

Demographic Information Form—Study 1 & Study 2

*Do NOT put your name on this sheet*

This information is for our reference only in terms of determining the descriptive demographics of our participants. Answer the questions only to the level you feel comfortable. As always, you may skip any question.

This study was conducted in part because we are concerned about the limited nature of research that has been done with undergraduates with learning differences. (NOTE: Bates College identifies learning differences as: reading/writing/math learning disorders, attention deficit/hyperactivity disorder, psychological/psychiatric conditions, auditory/visual/sensory motor disorders, and temporary medical issues.) In order to help address this issue:

1. Please report if you have a diagnosed learning difference (whether or not it is documented at Bates College):
   a. Yes, I have a diagnosed learning difference
   b. No, I do not have a diagnosed learning difference

2. If you answered “No” to the previous question, do you believe that you may have a learning difference that has not been tested?
   a. Yes
   b. Not Applicable

3. What is your expected year of graduation?
   a. 2018
   b. 2017
   c. 2016
4. Please indicate your age in years (i.e. 20): _______

5. What is your ethnicity?
   a. Asian/Asian-American
   b. Black/African-American
   c. Caucasian/European-American/White
   d. Native-American
   e. Multi-Ethnic/Multiracial
   f. Other

6. If you answered “Other” to the previous question, please specify your ethnicity/race:
   __________________________

7. What is your gender identity?
   a. Female
   b. Male
   c. Other

8. Does anyone in your family have a diagnosed learning difference?
   a. Yes
   b. No

9. If you answered “Yes” to the previous question, please specify which learning differences: ________________

10. How knowledgeable are you about learning differences?
    a. 1—no knowledge
    b. 2
11. What are your primary sources of knowledge about learning differences? (check all that apply)
   a. My doctor/therapist
   b. Family members
   c. Media (i.e. news, TV, movies, music)
   d. Academic journals/articles
   e. Academic classes pre-college
   f. Academic classes at Bates
   g. Peers who have learning differences
   h. Peers who do not have learning differences
   i. Other: _________________

12. What is your cumulative GPA out of 4.00? (first-year students: an estimate is fine) _____

*additional info for participants with learning differences only*

13. What diagnosed learning difference(s) do you have? (check all that apply)
   a. Dyslexia—reading learning disorder
   b. Dyscalculia—math learning disorder
   c. Dysgraphia—writing learning disorder
   d. ADHD—Attention Deficit/Hyperactivity Disorder
   e. Psychological/Psychiatric condition (i.e. anxiety, depression)
f. Auditory disorder  
g. Visual disorder  
h. Sensory motor disorder  
i. Temporary medical issue (i.e. concussion, broken bone, etc.)  
j. Other: ____________________

14. Have you notified the college of your learning difference?  
a. Yes  
b. No  

15. If you checked “yes” for question 3, what accommodations do you receive? (check all that apply)  
a. Extended testing time  
b. Note taker or note taking assistants  
c. Assistive reading technology  
d. Counseling  
e. Auditory amplification  
f. Visual disability equipment  
g. Speech to text  
h. Tutoring (professional or peer)  
i. I am not eligible for any accommodations  
j. I am eligible for accommodations but I choose not to use them  
k. Other: ____________________

16. How often do you utilize your accommodations?  
a. Always
b. Sometimes

c. Never

17. If you have chosen not to notify the college of your learning difference OR chosen not to use your accommodations, please explain why:______________________________

______________________________

18. How old were you when you received your diagnosis? ________

19. How many times has your learning difference been re-tested since the initial diagnosis?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4+
Appendix E

Study 1 Thank You / Debriefing Sheet

Thank you so much for your participation in this study. The purpose of this study was to examine peer and self-perceptions of students with learning differences at Bates. If you would like to talk to a professional about anything that was brought up during our discussion, we would encourage you to contact a professional. Below we have provided the contact information for the thesis advisor, Rebecca Fraser-Thill, and the Psychology Department chair, Amy Douglass, as well as my personal contact information for further questions.

If you have any questions or concerns relating to this research project, please contact Megan Lapp at mlapp@bates.edu. Also, thank you for your time. We could not complete our research without cooperative people such as you.

If you would like to talk to a professional about anything that was brought up by this study, we would encourage you to contact a professional. Below we have provided the contact information for the thesis advisor, Rebecca Fraser-Thill, and the Psychology Department chair, Amy Douglass, as well as my personal contact information for further questions.

Study 2 Thank You / Debriefing Sheet

Thank you so much for your participation in this study. Before you leave, we would like to give you some more information on the study you just participated in. As we said in the beginning, the purpose of this study is to examine peer and self-perceptions of students with learning differences at Bates. Specifically, we are interested to see whether students have a negative implicit bias against those with learning differences. This study was designed based on the Go/No-Go Association Task developed by Nosek & Banaji (2001) to test implicit bias.
As we continue with this work, we need to ask for your assistance. It is important that you not describe the details of this work to other potential participants in this study. Obviously, if participants come to the study already knowing what our specific research question is, their responses might be biased by that knowledge. In such a case, our time would be wasted, as well as that of previous participants. So please help us by limiting your description of this study to the general terms in which we originally presented it: a study of peer perceptions of learning differences at Bates College.

If you have any questions or concerns relating to this research project, please contact Megan Lapp at mlapp@bates.edu. Also, thank you for your time. We could not complete our research without cooperative people such as you.

If you would like to talk to a professional about anything that was brought up by this study, we would encourage you to contact a professional. Below we have provided the contact information for the thesis advisor, Rebecca Fraser-Thill, and the Psychology Department chair, Amy Douglass, as well as my personal contact information for further questions.

Contact Information—Study 1 & Study 2

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Appendix F

Learning Difference Terms (pretested with N = 25 students at Bates College)

Learning Difference Terms—disorder, ADHD, dyslexia, extra time, Adderall

Affective Terms (taken from Greenwald, McGhee, & Schwartz, 1998)

Positive Terms—peace, pleasure, rainbow, sunrise, laughter, paradise

Negative Terms—crash, accident, grief, pollute, divorce, jail

Evaluative Terms (taken from Greenwald & Farnham, 2000)

Positive Terms—smart, bright, success, competent, worthy

Negative Terms—stupid, failure, useless, weak, despised
Appendix G

*Items Measuring Explicit Stigma (α = .73)*

To what extent do you agree with the following statements?

1. Individuals with learning differences, on average, are less intelligent than individuals without learning differences

2. Individuals with learning differences are “working the system” by requesting and using accommodations

3. Accommodations (such as extended time on tests) are unfair