May 2013

College instructors' preparedness to teach students with learning disabilities

Kathryn D. Hansen
The University of Western Ontario

Supervisor
Dr. Debra Dawson
The University of Western Ontario

Graduate Program in Education

A thesis submitted in partial fulfillment of the requirements for the degree in Master of Education

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Recommended Citation

Hansen, Kathryn D., "College instructors' preparedness to teach students with learning disabilities" (2013). *Electronic Thesis and Dissertation Repository*. 1244.
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COLLEGE INSTRUCTORS' PREPAREDNESS TO TEACH

STUDENTS WITH LEARNING DISABILITIES

(Thesis format: Monograph)

by

Kathryn <u>Hansen</u>

Graduate Program in Education

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Education

The School of Graduate and Postdoctoral Studies
The University of Western Ontario
London, Ontario, Canada

Abstract

An increasing number of students with learning disabilities (LD) are attending community colleges in Ontario. In the context of the social model of disability and critical disability theory, this research study situates the role of preparation as a key factor for inclusive education. The perceptions of community college instructors regarding their preparedness to teach students with LD were investigated using a mixed-methods approach. The *Instructor Preparedness Questionnaire* was developed to measure instructors' knowledge and attitudes regarding students with LD at a large community college in southwestern Ontario. Follow-up interviews with 12 participants provided qualitative data. Results showed that despite moderately positive scores on both the attitude and knowledge scales instructors generally felt unprepared for the task of teaching students with learning disabilities. The importance of preparing college instructors with the knowledge and attitudes for inclusive education is evident. Implications for college administrators, instructors and students are discussed.

Key words

learning disabilities, community college, post-secondary, AODA, inclusion, social model

Acknowledgments

This research project has been a fantastic learning experience. To my supervisor, Debra Dawson, thank you for your steady guidance and kind support. To my committee member, Jacqueline Specht, your technical knowledge and enthusiasm for this project have encouraged me greatly. To my family, and many mentors, friends and colleagues thank you for your inspiration.

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Chapter 1 Introduction

The focus of this study was to explore the perceptions of community college instructors about their preparedness for teaching students with learning disabilities (LD). Community colleges play an important role in providing vocationally-oriented post-secondary education in Ontario. Faculty at community colleges are hired as experts in their fields and not necessarily trained as educators. Although most have credible teaching experience and attend professional development opportunities and training, there is no standard certification for community college educators (Fisher, 2006; Howard & Taber, 2010). Furthermore, the student population attending community colleges in Ontario has continued to diversify as many non-traditional students are finding their way to the community college classroom. Non-traditional students are those who may not have attended post-secondary education in the past; including those of differing age, ethnicity or social class (Schuetze & Slowery, 2002). Amongst these college students are a constantly increasing number of students with diagnosed learning disabilities (Government of Ontario, Ministry of Training, Colleges and Universities [MTCU], 2011). Statistics indicate that despite increasing rates of entry, students with LD still face barriers in completing their post-secondary programs (Nichols, Harrison, McCloskey & Weintraub, 2002; Standing Senate Committee on Social Affairs, Science and Technology [SSCSAST], 2011). Research has shown that through identifying and addressing barriers, and with adequate support these students have a greater chance of success in

their post-secondary education. Furthermore, students with LD have noted that key components to their support are faculty understanding of their learning needs and the faculty-student relationship (Denhart, 2008; Nichols, et al., 2002; Rao, 2004).

In my personal experience as a college educator, I was aware of the number of students with learning disabilities in college classrooms; as an instructor with a background in special education, I felt that I had some understanding of the issues and concerns related to teaching students with learning disabilities, yet I had little formal preparation for the task. I found myself questioning my own understanding and preparation for teaching students with learning disabilities. These uncertainties led me to consider the preparation and inadequacies that college educators might experience as they find more students with learning disabilities in their classes.

There are numerous studies in the literature exploring the attitudes, perceptions and beliefs of university and college faculty towards students with learning disabilities in the United States (U.S.; Murray, Wren & Keys, 2008; Rao, 2004), but few in Canada (Hindes & Mather, 2007) and none are found in the context of the Canadian community college. In addition, the literature clearly establishes the importance of faculty preparation for teaching students with learning disabilities (Burgstahler &Doe, 2006; Murray, Lombardi, Wren & Keys, 2009). The term "preparedness" is defined as "ready for action; the state of being prepared" (Merriam-Webster, 2013). Looking further, the word "prepared" is defined as "to be ready for something; made ready in advance"

(Merriam-Webster, 2013). In research about teacher preparation for inclusion, preparedness is defined as "a state of readiness for the task" and "having the skills and attitudes to do the job" (Hayt, Smit & Paulsen, 2001; Sharma, Forlin, Loreman & Earle, 2006).

Given that faculty attitudes and interactions with students with disabilities are indicated as instrumental in facilitating student retention and success, it is important to assess how college instructors perceive their preparedness to teach students with learning disabilities. The main research question addressed in my study was, "Are community college instructors prepared to teach students with learning disabilities?" Community college instructors were asked to describe their preparedness and perceived abilities to teach students with learning disabilities. Based on my personal experience in the college setting, I felt that many community college faculty members perceived themselves as unprepared or at least not as well prepared as they could be for this task. If college instructors are not well prepared for the increasing number of students with LD, it is unlikely that the barriers to academic success will be addressed or students adequately supported in their college level learning.

With the increased number of students with learning disabilities attending post-secondary education, it is more important than ever for educators to recognize and prepare for the diverse learning needs of their students. In the context of critical disability theory, this research study situates the role of educator preparation as a key

factor for a successful and inclusive education system. Based on the social model of disability, critical disability theory challenges our assumptions of sameness and values the inevitability of difference yet recognizes the role of defining disability as we interact with our environment (Hosking, 2008; Pothier & Devlin, 2006). Critical disability theory merges the social model of disability with some aspects of the medical model such that it challenges the meaning of impairment, includes personal responses to disability and considers how the physical, institutional and attitudinal environments fail to meet the needs of those labeled with disability. It counters the traditional way of looking within the individual for disability and suggests that the cumulative social environment contributes to the construction of disability (Hosking, 2008; Pothier & Devlin, 2006).

Placing preparedness within this framework led to my secondary research questions: Can college instructors describe or define the term "learning disability"? What knowledge do instructors have about the best practices or strategies for teaching students with learning disabilities? Are they familiar with accommodations and the reasons for them? What are the attitudes of college instructors toward students with learning disabilities? And finally, what do college educators believe would help them to be more prepared for this task?

To answer these questions I developed a survey instrument unique to college educators. There were questionnaires reported in the literature; however, none suited the exact needs of this study. In addition, previous research has described the need for more

qualitative investigation on the topic of faculty perceptions of learning disabilities. I used

semi-structured interviews to gain further insight into the perceptions of college

instructors regarding their preparation for teaching students with LD. The information

gathered in this research study is valuable to many stakeholders in the community college

system. Educators can recognize their strengths and areas for development,

administrators can use this information in planning for faculty development and training,

and also students with LD can benefit from a more comprehensive plan for student

success.

Chapter 2 Review of Literature

This chapter presents a review of the current literature related to this research study. I begin by discussing the role of community colleges in post-secondary education in Canada, and then the training received by Canadian community college instructors. Second, the definition of the term learning disability (LD), the number of students with learning disabilities attending community college and the framework for inclusive post-secondary education are presented. Finally, the recent literature investigating faculty perceptions of students with learning disabilities is examined.

The Canadian Community College

Community colleges play an important role in the Canadian post-secondary education system. They evolved in the 1960's and 70's, through the amalgamation of technical and vocational schools, in response to the increasing need for trades and technology education. In Ontario, there are currently 24 community colleges, with the designation of Colleges of Applied Arts and Technology (CAAT). Dennison (1995) described the community-based orientation of colleges in Canada. As a result of their beginnings in trades and technology, even today, colleges have a close working relationship with the community and its' industries and therefore respond to the local labour market with the design of new courses and curricula. The Association of Canadian Community Colleges (ACCC, 2010) described the primary functions of the

community college as providing training for industry, business and public service sectors; as well as meeting the educational needs of vocationally minded secondary school graduates. Colleges work on the principles of increased accessibility and flexible scheduling making post-secondary education available to many "non-traditional" students. Non-traditional student groups include those whose populations are not conventionally associated with attending higher education such as those of differing age, ethnic or societal class (Schuetze & Slowey, 2002). Students with disabilities have typically been one of these underrepresented, non-traditional groups in post-secondary schools across Canada (SSCSAST, 2011).

ACCC (2010) stated that colleges are known to offer a more job-related curriculum than universities, with characteristically smaller classes, more interactive teaching styles and more inclusive entry criteria. A key difference between colleges and universities in Ontario is that community colleges promote an emphasis on teaching and sharing of knowledge, whereas universities focus more on research and generation of knowledge (Dennison, 1995; Higher Education Strategy Associates, 2012; Twombly & Townsend, 2008). In the limited literature regarding community college faculty, there is a distinct emphasis on the role that teaching plays as a distinguishing factor between colleges and universities (Carusetta & Cranton, 2009; Dennison, 1995; Fugate & Amey, 2000; Twombly & Townsend, 2008). Carusetta and Cranton (2009) described the

emphasis on teaching at community colleges as one of the underlying principles believed to benefit Canadian society which formulated the college systems' raison d'etre.

In the published research about Canadian post-secondary education, there are a lack of studies on community colleges. In many cases, Canadian researchers have drawn on the larger volume of published studies concerning American educational institutions for reference and comparison (Harrison, Larochette & Nichols, 2007); however, there are fundamental differences between the American and Canadian post-secondary education systems (Dennison, 1995). The post-secondary system in the U.S. is comprised of numerous community colleges, two-year colleges and four-year colleges and universities. In comparison, there are far fewer Canadian institutions, namely, universities and community colleges. Dennison (1995) indicated that the American system was much larger in volume and yet more limited in its diversity. These differences denote the need for research at Canadian post-secondary institutions.

College Faculty Training

Despite the strong emphasis on teaching, the college system does not require instructors to be trained educators, and only mandates professional development training after instructors are hired full-time. In addition, a large portion of college courses are taught by part-time faculty. Community college instructors usually have extensive experience in their industry or field of study, and typically have university degrees, and

increasingly have completed Master's or Doctorate degrees (Howard & Taber, 2010).

Similar to university faculty, their professional development as educators takes place via

on-the-job workshops and certifications (Carusetta & Cranton, 2009; Fisher, 2006). It

has been suggested that the recent blending of community colleges and universities

through transfer agreements has led to "increasing credentialism" of community college

teachers (Howard & Taber, 2010; Twomby & Townsend, 2008). Twomby and

Townsend (2008) also concluded through their research on community college faculty

that there was little evidence that the role of the college educator was unique from that of

university professor. They suggested that these educators have similar skill sets for the

teaching portion of their work. Therefore, despite fundamental differences between

community colleges and universities, I was able to draw on the more prolific research on

university faculty when exploring for background for this study.

Lowry and Froese (2001) described the lack of studies investigating the quality of

teaching at Canadian community colleges that, paradoxically, proposed to have a strong

focus on teaching. Fisher (2006) noted the lack of research regarding effectiveness of

Canadian community college instructors, and their lack of professional preparation for

teaching. He pleaded for "the scholarship of college teaching" which he described as

three-fold: the assessment of effective teaching at the community college level, pre-

service instructor training and raising institutional excellence through on-going faculty

development and certification.

The available literature suggests that better preparation and development would be valuable to the instructional practices of community college instructors (Carusetta & Cranton, 2008; Fugate & Amey, 2000; Lowry & Froese, 2001; Twombly & Townswend, 2008). Twombly and Townsend (2008) stated that the limited research about American community colleges has a tendency to simply describe instructors and their teaching practices. This has been an oversight, neglecting to dig deeper into the teaching-learning process and which best practices might improve student success. Fugate and Amey (2000) interviewed community college instructors in the early years of their careers and found that they came to teaching from a variety of backgrounds. Instructors chose community college because it focused on teaching rather than research, and most agreed that preparation and development for teaching would be advantageous. Instructors who Fugate and Amey interviewed expressed a desire to become better teachers in order to more effectively reach the diversity of learners present in their classrooms. In addition, research by Lowry and Froese (2001) at the Nova Scotia Community College determined that although instructors chose to work in the college because they wanted to teach, they perceived a need for added training in order to become more effective instructors. Carusetta and Cranton (2008) concluded that Canadian community college instructors needed a deep understanding of their roles as educators if their institutions were going to engage students in critical thinking, creative leadership and innovation. The consensus in higher education training and development is that understanding best practice for

teaching and learning is an important component to student engagement and retention (Chickering & Gamson, 1987; Kuh, 2001).

Students with Learning Disabilities

    The definition of learning disability. The term "learning disability" has been in use only since the 1960's when pioneers in the field conceived the term to describe children with language, reading, communication and behavioural disorders whose traits did not fall into other categories of disability, seemed of average intelligence, and yet, were struggling learners (Wiener & Siegel, 1992; Winzer, 2008). Over the past two decades, researchers, practitioners and education policy makers have debated the definition of learning disability.

    One of the most called upon definitions has been the one developed by the Learning Disability Association of Canada (LDAC). The most recent definition from LDAC includes the following:

> Learning Disabilities refer to a number of disorders which may affect the acquisition, organization, retention, understanding or use of verbal or nonverbal information. These disorders affect learning in individuals who otherwise demonstrate at least average abilities essential for thinking and/or reasoning. As such, learning disabilities are distinct from global intellectual deficiency.

Learning disabilities result from impairments in one or more processes related to perceiving, thinking, remembering or learning. These include, but are not limited to: language processing; phonological processing; visual spatial processing; processing speed; memory and attention; and executive functions (e.g. planning and decision-making).

Learning disabilities range in severity and may interfere with the acquisition and use of one or more of the following: oral language (e.g., listening, speaking, understanding); reading (e.g. decoding, phonetic knowledge, word recognition, comprehension); written language (e.g. spelling and written expression); and mathematics (e.g., computation, problem solving). Learning disabilities may also involve difficulties with organizational skills, social perception, social interaction and perspective taking. (Learning Disability Association of Canada [LDAC], 2002)

Many describe this definition as a "processing deficit" definition (Harrison & Holmes, 2012; Kozey & Seigel, 2008). It emphasizes the difficulties most individuals with learning disabilities have with some types of information processing despite having at least average intellectual (thinking and reasoning) abilities. In addition, the LDAC definition states that learning disabilities are indicated by unexpected academic

underachievement, or academic achievement maintained by high levels of support, and finally, that these disabilities impact many areas and last throughout the individual's life.

Practitioners turn to the American Psychiatric Association, *Diagnostic and statistical manual of mental disorders*, (2000) 4th ed., text rev. where the definition of "learning disorder" is defined as

> the individual's achievement on individually administered standardized
> tests in reading, mathematics, or written expression is substantially below
> that expected for age, schooling, and level of intelligence. The learning
> problems significantly interfere with academic achievement or activities of
> daily living that require reading, mathematical, or writing skills…
> Substantially below is defined as a discrepancy of more than 2 standard
> deviations between achievement and IQ. (p. 49)

This definition is commonly referred to as the "discrepancy definition" as it emphasizes the incongruity between the general intelligence of an individual measured on standardized tests of cognitive abilities and his or her scores on standardized measures of academic achievement. An individual with a learning disability usually demonstrates academic under-achievement that is not aligned with his or her IQ, which is average or above.

There are resources available that provide information for college and university faculty about the definition of LD and the identification process used by Disability Services Offices (DSO). The College Committee on Disability Issues (CCDI) website includes a "Faculty Guide on Learning Disability" (College Committee on Disability Issues, CCDI; 2002). In addition, the text "Learning disabilities: A guide for faculty at Ontario universities" (Logan, 2009) is available on the Council for Ontario Universities website. These guides describe the various components of LD using both the processing deficit and the discrepancy definitions. Logan (2009) explains the discrepancy between the student's average general intelligence and a selective deficit in functioning that is leading to academic underachievement as a key characteristic of the student with LD. These documents also describe the "invisible" nature of LD since it is not obvious when meeting a person. The CCDI description includes what LD "is not". In other words, it is clearly not due to lack of motivation, cultural or language differences, or poor teaching. Learning disabilities are described as permanent, life-long and often pervasive.

The definition of the term learning disability has continued to evolve over the past decade. Harrison and Holmes (2012) discussed the complex nature of the definition and the confusion that has emerged from the lack of consistency in defining, and subsequently, assessing and diagnosing LD in Canada. The aptitude-achievement discrepancy definition began as a way to psychometrically measure learning disabilities, but according to Scanlon (2013) it was never validated. This rationale maybe used to

remove the discrepancy definition from the updated DSM (DSM-5) which will be released in 2013 (Scanlon, 2013). Tannock (2013) outlined four proposed criteria for LD in the DSM-5. They are i) key characteristics: persistent learning difficulties despite interventions, ii) measurement: academic skills are below those expected for the individual's age and there is low academic achievement, iii) age of onset: early school years, and iv) exclusion/inclusion: LD is not due to intellectual or developmental delay, other sensory or psychosocial deficits or lack of educational opportunity.

To summarize, LD remains a diagnosis that is defined by low academic achievement and persistent learning difficulty after intervention and is not due to other factors such as low intelligence or lack of opportunity. Consequently, it is important for educators to understand the basic components of the definition: what constitutes a learning disability and what does not and that the underachievement expressed by students with LD is not a reflection of their intellect or reasoning abilities.

Despite the criticism of the intellectual-achievement discrepancy model of LD, it continues to be the most commonly used diagnostic criteria (Logan, 2009; Scanlon, 2013). Learning disabilities are diagnosed through a series of observations, interviews and standardized tests known as a psychoeducational assessment conducted by school psychologists. Most, but not all individuals are diagnosed in elementary or secondary school. For those who are undiagnosed upon entering post-secondary education, the means of assessment are made available through the school's Disability Services Office

(DSO). The incidence of learning disabilities is considered to be one in ten for the general population (Kozey & Siegel, 2008), with males being diagnosed up to twice as often as females. This number has also grown as a result of more thorough recognition and diagnostic methods (Winzer, 2008).

The increasing number of students with LD attending community college. As a result of changes in legislation, improvements in transition planning and increasing societal awareness, the doors to post-secondary education have been slowly opening for students with disabilities (Harrison, et al., 2007). Post-secondary education is believed to be a valuable asset in today's knowledge-based economy. Canadians who complete a college or university program have greater earning power and rates of employment than those who have not attended post-secondary school (Fichen, Barile, Asuncion, Fossey, Robillard, & Lamb, 2003; Human Resources and Skills Development Canada (HRSDC; 2009). The December 2011 document titled "Opening Doors: Reducing barriers to post-secondary education in Canada" (SSCSAST, 2011), stressed the importance of post-secondary education for all citizens, but particularly those with disabilities as it plays an important role in a country's development by impacting both individuals and the greater society.

By the early 1990's students with learning disabilities began accessing post-secondary education across North America and numbers have continued to increase over the past twenty years. Today, the number of students with disabilities attending post-

secondary institutions is greater than ever before (SSCSAST, 2011). As is also true in K-12 special education, the largest portion of this group is students with diagnosed learning disabilities (Fichen et. al, 2003; Vogel, Holt, Sligar, & Leake, 2008).

Data available from the Ontario Ministry of Training, Colleges and Universities (MTCU) indicated that over 41,000 students were registered with Disability Services Offices at Ontario publically funded post-secondary institutions in the 2009-10 year (Government of Ontario, MTCU, 2011). Of these students, the majority were registered at community colleges. The MTCU statistics indicated that approximately 13% of the overall student population at community colleges was registered with disability services. The 2010 enrolment statistic represented a 27% increase in students with disabilities on campuses across Ontario over the previous five years (Government of Ontario, MTCU, 2011). Additional data from Ontario's 24 community colleges confirmed that nearly 40% of students registered with student disability offices in 2009-10 indicated that they had a learning disability. Learning disability has continued to be the most common disability diagnosis at community colleges, followed by mental health and chronic illness (CCDI, 2010). Table 1 presents the complete data on the categories and numbers of students registered with Disability Services Offices at Ontario community colleges in 2009-10.

Table 1

Data on student disability categories 2009-2010 collected from Ontario community colleges (CCDI, 2010)

COLLEGE:	Acquired Brain Injury	Attention deficit/hyper activity disorder	Chronic illness/ systemic/ medical	Deaf, deafened, hard of hearing	Learning Disability	Low Vision, blind	Mobility/func tional	Psychiatric	ASD	MID	OTHER	TOTAL
							CCDI - Data Collection APRIL 1, 2009 - MARCH 31, 2010					
Algonquin	23	176	196	49	786	24	76	214	60	60	14	1,678
Boreal	4	10	18	4	106	4	11	40	3	24	2	226
Cambrian	28	107	65	18	356	6	84	115	10	36	32	857
Canadore	10	90	86	18	277	8	20	106	-	-	170	787
Centennial	20	63	124	57	702	16	100	124	30	110	54	1,400
Conestoga	17	100	118	20	355	27	125	120	13	14	2	911
Confederation	10	41	13	7	147	11	89	68	13	16	36	449
Durham	19	52	62	21	227	12	62	86	21	13	26	601
Fanshawe	42	194	170	53	697	25	245	229	11	35	75	1,730
Fleming	16	42	48	16	296	6	25	62	9	37	47	552
George Brown	28	87	124	120	517	22	99	269	19	58	9	1,352
Georgian	21	130	184	18	297	14	102	167	17	31	45	978
Humber	34	124	205	30	590	30	99	242	18	53	25	1,450
La Cite	7	22	14	24	190	4	27	24	2	-	7	319
Lambton	11	41	80	10	142	4	4	30	2	30	5	359
Loyalist	10	44	31	26	146	4	49	105	7	26	9	457
Mohawk	41	93	187	53	337	45	226	208	29	62	-	1,343
Niagara	24	83	271	17	340	11	12	167	22	20	128	1,095
Northern	2	29	26	4	247	3	32	81	4	33	3	464
Sault	6	22	21	12	154	1	19	52	4	16	13	320
Seneca	10	66	328	20	749	15	41	420	18	80	57	1,706
Sheridan	29	103	108	38	515	19	177	245	23	47	3	1,237
St. Clair	13	56	191	13	170	14	10	81	2	66	65	616
St. Lawrence	16	118	105	21	345	2	27	251	6	18	10	919
TOTAL	441	1,893	2,775	669	8,688	327	1,761	3,506	343	885	837	21,806
percentage of total population	2.02%	8.68%	12.73%	3.07%	39.84%	1.50%	8.08%	16.08%	1.57%	4.06%	3.84%	

It is clear from these statistics that the number of individuals with learning

disabilities attending community college in Ontario is significant. This is particularly

important as the rates of completion and retention are lower for students with disabilities

relative to their non-disabled peers (DaDeppo, 2009; Litner, Mann-Feder, & Guerard,

2005; Getzel, 2008; Gregg, 2007; SSCSAST, 2011). However, research has shown that

these students can be successful in completing their post-secondary requirements in a timely fashion if they have adequate support from the Disability Services professionals and faculty (Getzel 2008; Nichols et al. 2002; Wessel, Jones, Markle & Westfall, 2009). From 1998-2002, the Ontario government funded the Learning Opportunities Task Force (LOTF) to explore the barriers for students with learning disabilities in post-secondary education in Ontario. The mandates were to improve the transition for students with LD to post-secondary education and to enhance services and supports for students with learning disabilities in an effort to enhance their success (Nichols et al., 2002). As a result of the LOTF recommendations, Disability Services Offices have been initiated at nearly every college and university. Faculty often turn to the disability services counselors as experts to help them understand more about students with learning disabilities (Burgstahler & Doe, 2006).

Inclusive Education and Instructor Preparation

The philosophy and practice of the inclusion of students with disabilities in post-secondary schools is an extension of inclusive education in the K-grade 12 education system. Inclusive education has played a role in education in Canada since the 1980's, securely based on a social justice framework and human rights legislation. In Ontario the K-12 system is guided by the Ontario Education Act (1980) and the passage of Bill 82

which recognized the rights of students with exceptionalities to a public education program that meets individual needs in the least restrictive environment (Winzer, 2008).

Subsequently, the right to equal participation in post-secondary education in Ontario is predicated on the 1982 Canadian Charter of Right and Freedoms (section 15) and is further supported by the Ontario Human Rights Code legislating that all residents of Ontario have equal access to educational opportunities. The Code mandates that students with disabilities must have access to appropriate supports and accommodations based on maintaining dignity and meeting individual needs. Colleges and universities must provide accommodations for students with disabilities to ensure access to educational opportunities. The phrase "duty to accommodate" is used to reinforce the fact that this is a legal requirement, not an option. Like students with other disabilities, students with documentation validating their learning disability are able to access supports and accommodations. By using the recommended accommodations, these students have equal opportunities to meet the learning outcomes of a course and earn a post-secondary education (Logan, 2009).

Since the early days of inclusion, educators have been intrigued by the best way to prepare for students with disabilities. The literature on post-secondary educators asserts very little about instructor preparation for inclusive and diverse classrooms (Hindes & Mather, 2007; Scott & McGuire, 2005). On the other hand, preparation of K-12 teachers for the task of inclusive education has been well researched and there are

several studies exploring the determinants of this preparation (Edmunds, 1999; Hay, Smit & Paulsen, 2001; Holheide & Reschly, 2008; Sharma, Forelin, Loreman & Earle,2006; Sze, 2009). A positive attitude toward students with disabilities was one the most important predictors of successful inclusive classrooms (Sze, 2009). Underlying the willingness to embrace inclusion was teacher confidence based on preparation for the task (Edmunds, 1999; Sze 2009). Subsequently, being prepared with the right attitudes and skills increased the likelihood of teachers implementing classroom strategies that consistently promoted inclusive education (Edmunds, 1999; Sharma et al., 2006). Hayt, Smit, and Paulsen (2001) asked over 2500 K-12 teachers about their knowledge, skills and attitudes toward inclusive education.   They concluded that teachers did not feel equipped for the task mainly due to insufficient training and lack of time. Their final recommendation was to improve teacher preparation for inclusion through better training before and throughout their teaching careers. Sze (2009) concluded that adequate preparation along with support for teachers positively impacted their attitudes toward inclusion and reduced their concerns about students with disabilities in their classrooms.

These authors agreed that being prepared for teaching in inclusive education settings depends on having the knowledge and attitudes to implement effective classroom strategies (Sharma et al., 2006; Sze 2009). For years sociologists and psychologists have been interested in the interaction between an individual's knowledge, attitudes and behaviours. Attitudes are formed by exposure to the attitude object, the attitudes of

others around us and the process of learning including information and knowledge. Knowledge is recognized as a structural component of attitudes and as such increases in knowledge are thought to be associated with a greater influence of attitude on behaviour (Kassin, Fein & Markus, 2011). In the context of inclusive education, many researchers follow the premise that our beliefs, knowledge and attitudes about students with exceptionalities are all very closely linked and that they influence our teaching practices. In other words, more effective strategies for inclusion are employed when disability knowledge is greater and attitudes are more positive (Hutchinson & Martin, 2012; Sze 2009).

The literature on instructor preparation for the inclusive post-secondary classroom is limited (Hindes & Mather, 2007). Scott and Gregg (2000) reviewed current practices in faculty education regarding students with learning disabilities. They discussed how faculty had a variety of experiences and were at various stages in their professional development. They recommended that education aimed at improving knowledge and attitudes towards students with LD be delivered through in-service training, on-line learning opportunities, and individual faculty support. They also suggested that disability-focused training should occur early in the careers of college instructors and be presented frequently, in an interactive and discipline-specific format, in order to meet the evolving education needs of faculty. Much of the research and my personal experience

indicate that this kind of training does not typically happen in post-secondary education today (Debrand & Salzberg, 2005; Salzberg, 2003; Scott & McGuire, 2005).

The majority of the literature about inclusive post-secondary education and faculty preparation turns to the concept of universal design for learning (UDL; Orr & Hammig, 2009). Originating in the field of architecture and design, the term "universal design" requires that the environment be organized to meet the needs of a wide spectrum of users. The general premise is that if physical environments are designed to meet the needs of individuals with disabilities, then they will be accessible and useful for the majority of people without further adaptation and without jeopardizing the integrity of the product (Burgstahler, 2009). Universal design for learning applies the principles of universal design to the education setting as a means of increasing accessibility and enhancing inclusion. Universal design for instruction and universal instructional design (UDI) are alternate models used to describe the same concept (McGuire, Scott & Shaw, 2006). Curriculum, teaching methods and assessments are created with the intention of reaching a diverse group of learners, reducing barriers to learning while maintain high standards of achievement and academic integrity (Center for Applied Special Technology [CAST], 2012; Orr & Hammig, 2009). Proponents of UDL/UDI suggest that this more inclusive approach naturally improves access for all students, including those with LD.

However, research suggests that educators lack the understanding needed to implement UDL effectively in post-secondary settings (Burgstahler & Doe, 2006; Gregg,

2007; Orr & Hammig, 2009). Burgstahler and Doe (2006) stated that most post-secondary educators lack specific training in effective teaching strategies for students with disabilities and recommended faculty development as a resolution. Burgstahler (2002) stated that instructors are generally unaware of best practices for teaching students with disabilities. In addition, faculty assumptions about the inability of students with disabilities to succeed in post-secondary education and their chosen careers are partly due to lack of knowledge about disability. She recommended professional development to improve faculty knowledge about students with disabilities and UDL principles, especially with regards to students with learning disabilities. These researchers emphasized the importance of disability knowledge and its' impact on faculty attitudes which in turn influence behaviour toward students affecting their self-image and academic performance.

In Ontario, the Ministry of Community and Social Services (MCSS) has implemented legislation under the Accessibility for Ontarians with Disabilities Act (AODA; MCSS, 2008) with the purpose of identifying, removing and preventing barriers for people with disabilities in key areas of daily living including education. In terms of educator professional development, AODA regulations require educational institutions to provide educators with training related to accessible course design and delivery. The objective is to create more inclusive classroom environments and increase the opportunities for successful learning for students with disabilities (MCSS, 2012). The

recommended training includes knowledge regarding different types of disabilities and

their needs, barriers to education and strategies to improve the environment for learning.

The Council of Ontario Universities (COU) has developed online resources and links to

allow educators to explore this training. One of the most recommended strategies on the

COU website is universal design for learning/ instruction (UDL/UDI; COU, 2012). The

term "accessible education" has been adopted by the Council of Ontario Universities

(COU, 2012) to encapsulate the contribution of Universal Instructional Design (UID) and

Universal Design for Learning (UDL) to inclusive university education.

Furthermore, a movement to provide services to students with disabilities from a

critical disability/ social model perspective is gaining momentum (Matthews, 2009).

UDL is described as being the fundamental tool for providing the necessary services to

students with disabilities in higher education within the social model. Given the current

emphasis by government, advocacy groups and disability service providers on accessible

education and the value of UDL as a means to improving accessibility, it is essential for

college educators to understand the concepts of UDL as part of their preparation for

inclusion of students with learning disabilities in the college classroom.

Faculty Perceptions of Students with Learning Disabilities

Faculty attitudes and actions play an important role in the success of post-

secondary students with disabilities (Denhart, 2008; Rao, 2004). Several studies have

investigated the knowledge, attitudes and beliefs of university faculty regarding students with disabilities (Jensen, McCrary, Krampe & Cooper, 2004; Lombardi & Murray, 2011; Murray et al., 2008; Murray, et al., 2009; Vogel et al. 2008; Zhang, Landmark, Reber, Hsu, Kwok & Benz, 2010). The trend in this research began over a decade ago when students with disabilities were appearing at increasing rates on university and college campuses. The earlier studies investigated faculty knowledge and "willingness to allow" students to use classroom and testing accommodations (Bourke, Strehorn & Silver, 2000). These studies took place at a time when Disability Services Offices were less common and faculty were responsible for determining the types of accommodations students with disabilities required. Currently, Disability Services Offices are present at almost all post-secondary education institutions and are responsible for determining a student's eligibility for accommodations and recommending the best types of accommodations. This support, along with increased guidance about the legal obligation to provide the accommodations to students with disabilities has led to the general understanding that this process is a requirement and not an option for faculty (Murray et al., 2008). However, as the number of students with disabilities in post-secondary education has increased, the research has continued to look at faculty attitudes and beliefs about students with disabilities and the faculty role in enhancing the success of these students. Retention of students with disabilities has become an important focus for Disability Services Offices and faculty (Vogel, 2008).

Many previous investigators created questionnaires to measure faculty perceptions of students with disabilities but not to distinctly measure faculty preparedness. Murray, Wren and, Keys (2008) developed a survey instrument that used a five-point Likert scale to measure faculty perceptions of students with LD. Factor analysis resulted in 38 items and 12 reliable factors. Murray, Lombardi, Wren and, Keys (2009) used a similar questionnaire to investigate the effects of prior disability-related training on attitudes and actions of faculty towards students with learning disabilities. Some of the questionnaire items from these previous studies and additional items about universal design for learning were subsequently used by Lombardi and Murray (2011). This survey tool had 39 items which loaded on eight reliable factors. Furthermore, Vogel et al. (2008) measured faculty knowledge, practice, attitude, and expectations of students with disabilities using a 35 item instrument with 5 subgroups and some open-ended questions. A Canadian study by Hindes and Mather (2007) used a 15-item questionnaire to investigate professor and student attitudes towards students with various disabilities at one university; however, they did not ask about learning disabilities as a separate category. In addition, faculty experiences of teaching students with all types of disabilities were examined by Zhang, Landmark, Reber, Hsu, Kwok, and Benz. (2010) with a 74 item questionnaire across five constructs using true-false or Likert-type questions.

One of the main findings of these previous studies was that attitudes of university faculty were generally positive regarding students with disabilities (Murray et al., 2008; Vogel, 2008). They also found that education and training led to improved knowledge, attitudes and practices (Lombardi & Murray, 2011; Murray, et al., 2008; Vogel et al. 2008; Zhang et al. 2010) and that knowledge was positively associated with personal actions supporting students with learning disabilities (Murray, et al., 2008). These studies showed that this was true at American universities, but they did not examine attitudes or knowledge at Canadian institutions or community colleges.

Despite these positive findings, Zhang et al. (2010) raised the concern that many faculty members were not supporting students with disabilities according to the legal requirements or following suggestions for best practice. In addition, their survey data was used to develop a four point model showing the interrelationships of what they determined to be the most influential factors affecting teaching practices for students with disabilities. Their model demonstrated that faculty knowledge (of disabilities and legal requirements) influenced faculty personal beliefs about students with disabilities which, along with perceived support from the institution, affected their level of comfort with students with disabilities and their willingness to provide accommodations. They recommended regular training opportunities for faculty and exposure to the abilities and potential of students with disabilities in order to emphasize "the lack of real differences between them and the rest of the campus's student population" (p283). This identified

the importance of assessing faculty knowledge and providing training as it directly

impacted practice.

Qualitative measurements of attitudes, knowledge and practice are less available

in the literature (Rao, 2004). One study by Jensen et al. (2004) provided a qualitative

analysis of the attitudes of 14 instructional staff at a large U.S. university. They

interviewed instructors, teaching assistants and administrators about their experiences,

knowledge and attitudes toward students with learning disabilities. In addition to their

quantitative survey, Vogel et al. (2008) included open-ended questions in their

assessment of campus climate for students with all disabilities. The findings from these

qualitative studies provided more detail about the concerns instructors had about how to

meet the needs of students with LD, the legitimacy of LD and the fairness of

accommodations but they did not ask specifically about the instructor's perceptions of

their preparedness to teach students with learning disabilities.

All of these researchers have stated how the increasing number of students with

LD on campuses across North America challenges faculty to better understand learning

disabilities, reflect on their attitudes toward students with LD, and develop strategies to

effectively facilitate these learners (Burgstahler & Doe, 2006; Denhart, 2008; Hindes &

Mather, 2007; Lombardi & Murray, 2011). The consensus in this body of research is that

faculty attitudes and practices contribute to the success or failure of students with

learning disabilities in post-secondary settings. Institutions of higher education need to

have a process in place to facilitate the assessment of faculty knowledge and attitudes on an ongoing and regular basis. These previous studies agree that this information is valuable and should be used to develop and improve professional development plans (Hindes & Mather, 2007; Lombardi & Murray, 2011; Vogel et al. 2008).

The goal of my research was to measure the knowledge and attitudes of Canadian community college instructors to determine their preparedness for teaching students with learning disabilities. The available inventories, as described in the literature, were designed for each particular study and although they measured the same constructs that I was interested in, they did not sufficiently fit my project. Several of the questionnaires measured faculty perceptions of a wide variety of disabilities and did not focus exclusively on learning disabilities. Most of them included a large number of factors with few items per factor; not focusing on the larger constructs of attitude and knowledge. Furthermore, many continued to word their items around "faculty willingness" which, although important, should no longer be considered a significant issue given the understanding that providing accommodations is a legal requirement; a more current and concise way of assessing instructors perceptions, focusing on the construct of preparedness (knowledge and attitude) was needed for my study. Also, there is a paucity of Canadian studies, particularly at the community college level, where the largest number of students with LD are attending post-secondary education.

Finally, the available research is lacking in qualitative data which can provide us with a deeper understanding of the strengths and needs of instructors based on their current knowledge and attitudes (Lombardi & Murray, 2011; Rao, 2004).

Summary

This literature review presents the current research regarding the inclusion of students with learning disabilities in post-secondary education settings. The number continues to grow and represents the largest portion of students registered with Disability Services Offices on campus (CCDI, 2010). In 2009-10 there were over 8,000 students with learning disabilities attending community colleges in Ontario (CCDI, 2010). This number does not include the group of students with learning disabilities who chose not to disclose their disability for fear of stigma or discrimination. We know that best practices for inclusive teaching and learning begin with adequate preparation of the educators including access to knowledge about disabilities and strategies for inclusion. Although this has been studied in the K-12 teacher population, it has not been addressed thoroughly in post-secondary education. Particularly, there is a gap in the literature regarding community college instructors' preparedness to teach the growing number of students with learning disabilities attending community colleges in Ontario and across Canada. My research study was conducted to address this gap and thus make a significant contribution to the existing literature. The research question "Are community college instructors prepared to teach students with learning disabilities?" explores the attitudes and knowledge of community college instructors regarding students with learning disabilities. In order to address this question, a reliable and valid instrument was developed and implemented as there was no tool available that met

the needs of this study. Furthermore, the relevancy of this research is supported by the recent AODA regulations that call for educators at post-secondary institutions to participate in training for accessible education. Included in the suggestions for improving accessible teaching and learning practice is the use of universal design for learning, a framework that has been researched as an inclusion strategy for post-secondary education.

Chapter 3: Method

Participants

Four hundred and twenty-four full and part-time instructors at a large community college in south western Ontario were invited to complete an on-line or hard-copy questionnaire. The invitation to participate was distributed through email and a semester start-up faculty meeting. One hundred and three responses were received through the on-line format and none by hard copy. Of the 103 responses, two did not answer more than the demographic questions so they were removed from the results. The remaining 101 respondents were retained for further analysis resulting in a 23.8% response rate. This response rate is not ideal but is considered typical for this type of research (Murray, Lombardi, Wren & Keys, 2009). The respondents ranged in their number of years of teaching from 0.5 to over 40 with a mean of 12.7 years (SD=9.2). To explore whether years of teaching impacted the attitude and knowledge scores, participants were further divided into three categories based on years of teaching: early career (0-5 years) n= 28; mid-career (6-15 years), n=36; and late career (15+ years), n=34. In addition, respondents were asked to select their primary school of teaching out of the possible eight schools of study at this college. The sample of participants based on school of study was representative of the overall college faculty population. This information can be found in Table 2.

Table 2

Number of questionnaire participants per school of study

School of Study	Number of survey participants	Number of full and part time faculty	% of faculty that participated in survey
Business	20	52	38.5
Community Studies	24	77	31.2
Health Sciences	11	45	24.4
Nursing	18	74	24.3
Skilled Trades	9	45	20.0
Engineering	10	57	17.5
Academic Studies	5	48	10.4
Media Art and Design	1	26	3.8
Undeclared	3	-	
Total	101	424	23.8

Follow up interviews were conducted with a sample of 12 of the questionnaire respondents (6 males and 6 females) who indicated by email that they were willing to participate in an in-depth interview. The demographic information for the interview participants is represented in Table 3. The interview participant sample was self-selected; however, it was a good representation since instructors from six out of the eight schools of study were included the interview process. There was also a good representation across years of teaching ranging from 1 -23 years (M 10.8, SD=6.8). In addition, I asked the interview participants about their highest level of education. The

sample included college diploma (n=3), university bachelor's degree (n=1), master's

degree (n=6) and PhD (n=2).

Table 3

Demographic characteristics of interview participants

Participant #	Years of teaching	School of teaching
1	10	Skilled trades
2	10	Nursing
3	20	Community Studies
4	11	Business
5	18	Community Studies
6	3	Community Studies
7	9	Business
8	1	Nursing
9	23	Engineering
10	16	Nursing
11	5	Academic Studies
12	4	Engineering

Materials

   Quantitative Instrument. Of the survey instruments available in the literature,

none was exactly suited to the particular needs of this study. As described in the

literature review, the previous studies examined many factors and the inventories were

lengthy (Lombardi & Murray, 2011; Murray et al., 2008; Murray et al., 2009; Vogel et al.

2008; Zhang, et al. 2010). I wanted to focus on the two factors of preparedness:

knowledge and attitude; therefore, I developed a survey tool titled the "*Instructor*

Preparedness Questionnaire" (Appendix A). The items for my questionnaire were

developed based on similar inventories from the literature (Lombardi & Murray, 2011; Murray et al., 2008; Murray et al., 2009; Vogel et al. 2008; Zhang, et al. 2010), as well as my expertise as a college instructor and input from the manager of the Disability Services Office. Seven items were based on the questionnaire from Zhang et al. (2010), five from Murray, Wren and, Keys (2008), three from Lombardi and Murray (2011) and two from Vogel et al. (2008). The wording of the items was changed to make it more relevant to the precise measurement of attitude and knowledge in the context of community colleges in Ontario. I designed three items in consultation with the manager of the Disability Services Office who is intimately familiar with the needs of students and instructors surrounding this issue. As a result, the questionnaire addressed themes such as knowledge of disability legislation, knowledge about LD and use of resources, attitudes towards students with learning disabilities, and perceptions of students with LD and their potential for success, as these factors have shown to be important in understanding faculty attitudes and perceptions (Murray, et al., 2008; Vogel, et al., 2008). *The Instructor Preparedness Questionnaire* originally consisted of 24 questions. The first two questions collected demographic information of interest: the number of years of college teaching and the instructor's primary school of teaching. The remaining 22 questions were designed with two key dimensions in mind: instructor knowledge with respect to students with learning disabilities and their supports (items #3 through 11), and, instructor attitude toward students with learning disabilities (items #12-24). A

Likert-type scale with six values ranging from 'strongly agree' to 'strongly disagree' was used with the aim of generating a clear positive or negative response to each statement on the survey.

   Qualitative Interviews.   The interview questions (Appendix B) were designed to dig deeper into the thoughts and perceptions of the interview participants. Four main guiding questions and seven probing questions were developed based on the literature (Jensen et al. 2004) and my research questions.

Procedure

   This study used a mixed methods design. Quantitative data were gathered from a questionnaire distributed to a large number of college instructors. Qualitative data were obtained from follow up interviews with a smaller group of instructors.

   Approval to conduct this research study was obtained through the Ethics Review Board of the University of Western Ontario (Appendix C). Permission was also obtained from the community college where the study was conducted. Participants for both the questionnaires and the interviews were assured of their anonymity and confidentiality. This was maintained throughout the study by not requesting any identifying information; signed consent forms were collected and kept in a safe and secure location separate from the data.

The *Instructor Preparedness Questionnaire* was piloted with a small group of college instructors (n=8) who were not part of the data collection for this research project. They completed the questionnaire in order to verify the wording and clarity of the items, along with overall content, the survey tool website access and the time required to complete. As a result, one of the pilot questions was changed. Originally I asked participants to select all of their schools of teaching within the college from a drop down box, but because some instructors teach in more than one school, this would have limited the comparison between groups; therefore, I decided to ask participants to select their primary school of teaching.

The email invitation to participate in the questionnaire was sent out twice to all part-time and full-time instructors over a 6 week time period. The letter of information (Appendix D) and consent form (Appendix E) was attached to the invitation to participate. The respondents were directed in the email to open the link to the Western University survey tool website which then opened the questionnaire. As described in the letter of information and consent, completion of the survey was considered as the individual's consent to participate in the research study. At the end of the questionnaire, participants were asked to contact the researcher by email or phone if they wished to participate in a follow up interview. Twelve semi-structured interviews were conducted and audio-recorded. The average length of the interviews was 45 minutes.

Data Analysis. Quantitative data analysis was conducted using SPSS software. Descriptive statistics were obtained for all 24 variables. Factor analysis and internal reliability scores (Cronbach's alpha) were used to determine the contribution of each variable to the two factors proposed in the questionnaire: knowledge and attitude, and thus verify these two sub-scales so they could be used for further analysis.

Qualitative data analysis began with transcribing the interviews verbatim using NCHexpresscribe software. The transcriptions were then analyzed using MAXqda10 qualitative data analysis software, which required me to read each transcription and then code the passages using broad categories at first.

In this study thematic analysis was chosen in order to obtain a rich overall description of the interview data using an inductive analysis. Braun and Clarke (2006) described inductive analysis as coding the data without trying to fit it into a pre-existing coding framework. As there is minimal qualitative research available on college teachers' perceptions of students with learning disabilities, there were no compelling pre-existing themes on which to base this thematic analysis. I followed the steps for thematic analysis as outlined by Braun and Clarke (2006) and Creswell (2007). The process began with noting any interesting ideas during the transcription of the interviews followed by reading over the transcriptions from all interviews to obtain a general sense of content and meaning. The next step was to identify "meaning units" or important phrases within each interview. A code was then assigned to each meaning unit and further data was

coded and thereby organized into meaningful groups using the qualitative analysis software program MAXqda10.   The codes were collated and possible themes identified. Braun and Clarke (2006) described a theme as "something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set" (p82). The next step was to gather all of the data related to each theme and then review the themes, revise them and finally, generate a clear definition of each theme. The process was a recursive one involving reading and re-reading the data to ensure that themes were distinct and consistent.

The rationale for using thematic analysis is its flexibility and ease of use. Its flexibility allowed me to look for themes in a number of ways, including looking for predominant discussions across the data set, as well as, responses to a particular question in the interview process. In addition, it is a fairly straight forward process for the novice researcher to learn and use. Finally, thematic analysis is seen as a valuable tool with the ability to offer a rich description of the data highlighting similarities and differences in participant responses (Braun & Clarke, 2006; Creswell, 2007).

Chapter 4: Results

Quantitative Analysis

The Likert scale scores from the questionnaire were imported from the survey

spreadsheet to SPSS (version 20) and visually screened for missing data and tested for

normalcy. The missing data did not form a pattern and was therefore considered to be at

random. The missing data were replaced with mean for the item, as Field (2005)

suggested that this is a good option when the variables are normally distributed and the

sample size needs to be preserved. Coding was reversed on questionnaire items # 12, 13,

16, 18 19, 21 and 22. These items were negatively worded to reduce the chance of

respondents answering habitually; however, to align with a higher score meaning a more

positive attitude these scores were reversed using SPSS. This was necessary for the

statistical analysis including descriptive statistics, factor analysis and ANOVA.

Descriptive Statistics. The means and standard deviations for each questionnaire

item are displayed in Appendix C. The mean number of years of teaching was 12.7

(SD=9.2) with a range of 0.5- 40 years. The Likert scale ranged from 1 (strongly

disagree) to 6 (strongly agree) for each item #3-24. Items number 8 and 14 asked

specifically about preparation to teach students with LD. The number of participants that

responded positively on the Likert scale (score of 4-6) on item 8 "I have attended

specialized training to acquire knowledge about students with learning disabilities and/or

how to teach them" was just under half (47/96 or 49%). Also of interest is the number of

participants who responded positively (score of 4-6) to item 14 "I believe I have the skills necessary to teach students with learning disabilities". Of all of the respondents (n=97), 76% agreed that they had skills (n=74), but only 36% agreed or strongly agreed with the statement, whereas the largest portion (40%; n=39) indicated that they somewhat agreed with the statement.

Construct Validity. The construct explored in this research study was "preparedness", specifically college instructors' preparedness for teaching students with LD. As such, preparedness was considered to have two contributing elements: knowledge (about learning disabilities and strategies that support students with LD) and attitude (regarding students with LD and their potential at community college). The questionnaire used for this study was developed with the measurement of these two factors in mind; therefore, the rationale for conducting a factor analysis on the data was to determine if the variables fit into the two factors as intended. Field (2005) outlined the steps for conducting a factor analysis on a questionnaire. Following his guidelines the following steps were performed on the data using SPSS.

First, a principal component analysis was performed using all 22 variables in order to look at the correlation matrix and screen the variables. Field (2005) recommended doing this in order to examine the correlation matrix and verify that each variable correlated with at least one other (r>.3) and that there were no variables that correlated too highly with others (r>.9) indicating singularity. If any variables met these

criteria then they would be removed before the factor analysis. In this data there was one variable, "time spent" that did not correlate with any others so it was removed from further analysis. This variable represented item 12 on the questionnaire and was worded "I spend a disproportionate amount of time making teaching/testing accommodations and assisting students with disabilities in my courses."

Construct validity was further examined by factor analysis forcing two factors and using oblique rotation. Oblique rotation was chosen as theoretically the two factors, knowledge and attitude, are considered related constructs; in other words, they are not independent of each other. Only items with loadings greater than .4 were selected for each construct. This resulted in the removal of two items. The variable "have skills" (item 14: I believe I have the skills necessary to teach students with learning disabilities) did not load clearly on only one factor and the "advocates for self" variable (item 23: Students with learning disabilities are advocates for their learning) did not load on either of the two factors. Further to this analysis, reliability measured by Cronbach's alpha indicated trouble with item 15 (The college is an accessible learning environment for students with learning disabilities) since it correlated poorly with the overall knowledge score (r=.186). Consequently, this item was removed to improve the convergent validity and internal reliability of the scale. As a result, Cronbach's alpha for the knowledge inventory increased from .776 to .818.

The factor analysis was subsequently repeated on the remaining 18 items. At this point the factor structure was not retained as the variable "support from student services" (item #24: I feel that I can get adequate support from Disability Services about students with learning disabilities) loaded under .4 on both factors and was therefore removed as well. This left 17 items for the final factor analysis. This final factor analysis resulted in the two intended factors being confirmed with eight variables clearly loading on the attitude factor and nine variables loading on the knowledge factor. The factor loadings are displayed in table 4. Questionnaire items #3-11 loaded on the knowledge factor. These variables are shown in the table 5. Questionnaire items #13, and 16 - 22 loaded on the attitude factor. These variables are described in table 6. Figure 1 shows the component plot illustrating the clear loading of the 17 variables on the two factors. The total variance explained by the two factors was 45.282%.

Table 4

Pattern matrix for factor analysis of 17 items

Questionnaire item	Component	
	1	2
Use LD as excuse	.779	.011
Accommod are unfair	.766	-.081
Integrity of curr	.747	.125
students wait, question LD	.718	-.103
concern about real work	.680	-.051
LD reduces quality of educ	.648	-.006
Students can be success	.598	.194
Professional LD effective	.477	.105
Understand needs	-.152	.824
Understand legal resp	-.183	.773
Understand term	-.061	.639
Assistive technology	.183	.598
Student services question	.024	.520
Statement first day	.301	.514
Specialized training	.351	.501
Diverse tests	.225	.500
Syllabus statement	.068	.406

Extraction Method: Principal Component Analysis

a. Rotation converged in 6 iterations.

Factor loadings of > .4 are highlighted

Table 5

Items loading on the knowledge factor

Item #	Questionnaire item
3	I understand the term "learning disability".
4	I have a strong understanding of the needs of students with learning disabilities.
5	I understand my legal responsibility as an instructor to provide accommodations for a student with a learning disability.
6	I include a statement on my syllabus that encourages students to meet with me to discuss their accommodation and learning needs.
7	I make a verbal statement on the first day of class inviting students with disabilities to meet with me to discuss their learning needs
8	I have attended specialized training to acquire knowledge about students with learning disabilities and/or how to teach them
9	I am aware of assistive technology that students with learning disabilities can use to improve their performance in my course.
10	Tests and other assessments that I administer in my courses are created with the diverse learning needs of students in mind
11	If I have a question about a student with a learning disability or their accommodation plan I would go to Student Services to seek support.

Table 6

Items loading on the attitude factor

Item #	Questionnaire item
13	Providing classroom and testing accommodations to students with learning disabilities is unfair to students without learning disabilities
16	Accommodations for students with learning disabilities compromise the integrity of the curriculum
17	I believe students with learning disabilities can be successful at the college level.
18	Students with learning disabilities may be able to do the school work using their accommodations but I am concerned that they will they will have trouble in the real work place.
19	I find students with learning disabilities wait until they are not doing well in class to come and talk to me and then I question whether they truly have a LD.
20	Professionals with learning disabilities may be as effective as professionals without LD in the same job/ occupation.
21	Students with a learning disability use it as an excuse when they are not doing well in my class.
22	Having students with learning disabilities in the classroom reduces the quality of the education that other students receive.
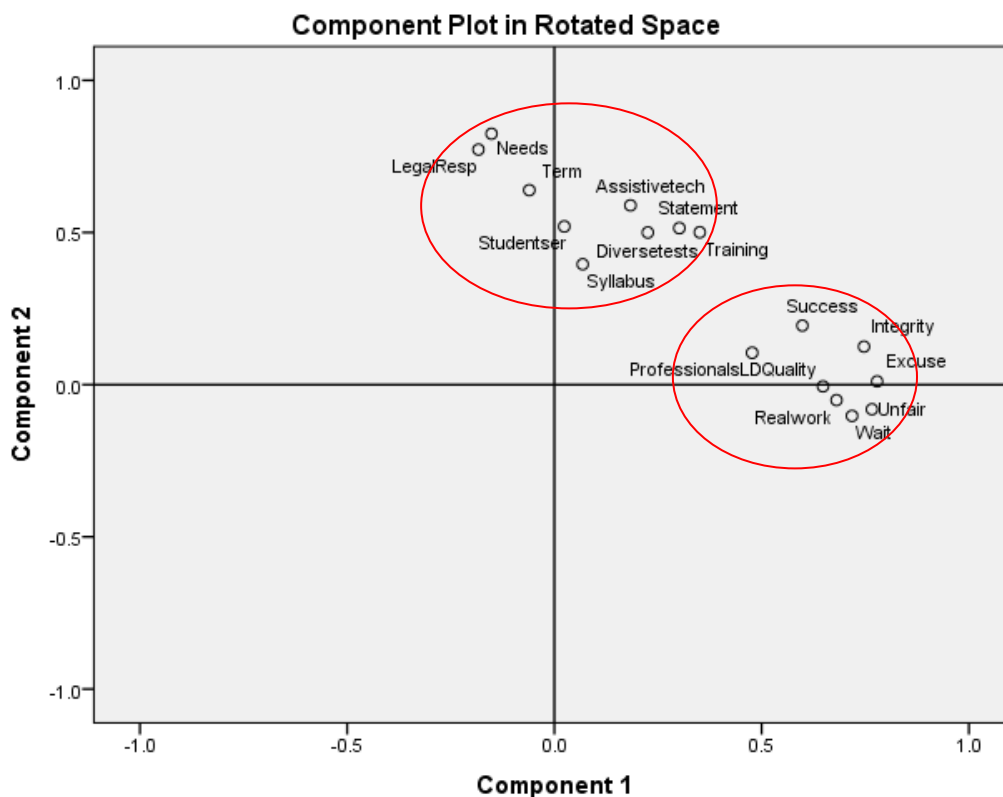
Figure 1: Component plot showing two distinct factor groupings.
Component 1: Attitude; Component 2: Knowledge

Reliability testing showed that reliability for the knowledge scale was good
(Cronbach's alpha= .818) and the item correlation ranged from r= .378-.647.   Similar
results were obtained for the attitude scale (Cronbach's alpha = .857; item correlations =
.486-.735). Factor correlation r= .385 demonstrated that the two factors knowledge and
attitude are somewhat correlated.

The participant scores for each of the two scales (knowledge and attitude) were then calculated. The mean overall score for the knowledge scale was 4.23 (SD= 0.86) and the mean overall score for the attitude scale was 4.33 (SD= 0.76).

Sample Size. Field (2005) discussed the question of sample size for factor analysis. Although some researchers have concluded that up to 300 cases are needed for a reliable factor analysis, others have indicated that as few as five participants per variable is adequate. Field described the work of Guadagnoli and Velicer who found that the reliability of factor solutions was related to the number and size of factor loadings and sample size. If a factor has 4 or more loadings greater than .6 then it is reliable despite the size of the sample. If a factor had 10 or more loadings with a value of .4 or greater then a sample size of 150 is adequate. Using these criteria, my sample size (n=101) is just large enough for factor analysis.

Field also recommended using the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) to determine if variables cluster in a way that factor analysis is an appropriate tool resulting in distinct and reliable factors. KMO values of .7-.8 are considered good and above .8 very good.   KMO value of .808 demonstrated a very good value and indicated that factor analysis will produce robust results. Bartlett's test of sphericity was also highly significant (p=.000, df=171) indicating correlations exist between the variables.

ANOVA: Years of Teaching. A one way ANOVA was conducted in order to investigate differences in knowledge and attitude scores between groups based on the number of years of teaching. The mean number of years of teaching was 12.6 years (SD=9.2, N= 98) with a range of 0.5 to 40 years. Dividing the participants into three categories based on years of teaching resulted in the following groups: instructors with 0-5 years of teaching experience (early career) N= 28, instructors with 6-15 years of experience (mid-career) N=36, and instructors with more than fifteen years of experience (late career) N- 34. I chose these groups based on the conventions of Fugate and Amey (2000) who defined early career as less than six years experience. Mean scores and standard deviations for each group are displayed in table 4. ANOVA conducted to explore the differences between these groups resulted in no significant difference between either the mean knowledge scores $F_{(2, 95)} =1.61$, $p=.205$ or mean attitude scores $F_{(2, 95)} =2.11$, $p=.126$ based on years of teaching experience.

Table 7

Means knowledge and attitude scores by years of teaching

Years of teaching	N	Mean knowledge score	SD	Mean Attitude Score	SD
Early career 0-5 years	28	4.52	0.61	4.51	0.85
Mid-career 6-15 years	36	4.20	0.85	4.19	0.87
Late career >15 years	34	4.32	0.62	4.08	0.79

Qualitative Analysis

Thematic analysis of the qualitative data resulted in grouping together the patterned responses from the data set to form themes. Four predominant themes were identified in relation to the research questions. The first theme was the instructors' perceptions of their preparation or lack of preparation to teach students with learning disabilities. The second theme was overall myths and misunderstandings about learning disabilities, including the lack of a suitable definition for the term learning disability, and misunderstanding of the characteristics and needs of students with learning disabilities. The third theme surrounded the discrepancy between the school environment and "real work" for individuals with learning disabilities. Finally, the fourth theme formed from the data analysis was instructors' concerns about the ability and desire of students with

LD to self-advocate or disclose their learning disability. Each of these themes is explored in detail in this section. As well, several instructors commented on the increasing number of students with learning disabilities in their classes.

The number of students with learning disabilities. The interview data collected in this research suggested that college instructors perceived an increasing number of students with learning disabilities attending community college. When asked about the number of students with LD in their classes, instructors who had been teaching at the college level for several years indicated that they had noticed an increase in the number of students identified with LD over the years. All of the instructors interviewed stated that they had, on average, 2-3 students identified with LD in a class of 40. Many also expressed their concerns about the higher number in terms of the resources available and class size. One instructor with more than ten years of experience teaching at the college commented:

> I think for sure the number has increased. It becomes more difficult with
> the number of students that we have in the classroom. It's become more
> and more difficult as a teacher; it's become more difficult to deal with the
> different learning abilities in the classroom and certainly with students
> with disabilities to try and accommodate them because of the number, the
> volume of students we have in the classroom. When I started here we
> probably had on average 20-25 students now I'm averaging closer to 40 in

the classroom and 20 in the lab at a time and that makes a huge challenge

for us as teachers, I think. The college really doesn't seem to take that into

consideration when they create the classes and they, you know, put

together the sections and the numbers of students. I don't think any regard

is given to what possible disabilities you might be dealing with.

Theme 1: Preparation to teach students with LD. Of the twelve instructors

interviewed, only three (25%) stated that they felt prepared to teach students with LD,

mainly through their experiences and educational backgrounds. Another three

interviewees indicated that they felt somewhat prepared and the remaining six (50%)

indicated that they still felt mainly unprepared for the task. All twelve stated that they

had been learning on the job about accommodations and that professional development

information would be valuable to them. When asked about their preparation these

statements were offered:

I was never taught. I learned as I was teaching here. I remember when I

first started here and I got a slip from student services and I would say to

the student "what does that mean?" and they would say that the

instructions are on the page… and it was just learn as you go, there was

no learning or formal education or PD about teaching students with

learning disabilities.

First of all my first year teaching, it was like being thrown into the fire, with all four core courses and 45 students and I was in shock and then on top of that I had a student that I did not know what to do for her, and there was no direction. I just had an accommodation sheet and she was to sit at the front of the class and she could read my lips and that was it. I did not know what to do to help her, and I tried to talk to her and it was awful. I felt so inadequate.

I will have to say that I was kind of thrown to the dogs where that was concerned.

I feel prepared to teach them. I don't feel prepared to accommodate them. I don't know enough about the new accommodation plans, etc. because I am not up to date on it, like the newest technology etc. It's hard to stay up on it.

I am, I feel I am. Only because this is what I believe in…that every student deserves as many opportunities as possible to be successful. That each one of their successes should be recognized...

When asked what would help them to be more prepared for students with LD several instructors mentioned that they would like to better understand learning disabilities and the assessment process, including the types of accommodations and how they help the student. In addition, most (10/12) mentioned that formal professional development training would be helpful.

> We have a group of experts here that could help us service these folks
>
> better. I am just learning as I go and the problem with that is you make
>
> mistakes along the way and there is no direction. I would like to know
>
> about the history, the availability of different resources and what I should
>
> be doing in my classroom. Is there anything special I should or should not
>
> be doing? What is the best practice around this? Nursing is based on best
>
> practice and this probably is too. Teaching should be based on best
>
> practice. If you help the teacher you help the students too. There is a
>
> power imbalance between teachers and students and if we don't teach the
>
> teachers than how helpful is it? It just doesn't work. Really, I think we
>
> could do better.

One interview question specifically asked about the instructor's understanding of Universal Instructional Design (UID) or Universal Design for Learning (UDL). Only

two of the instructors interviewed had heard of the concept and none were familiar with the potential of UDL as a strategy for improving accessibility to education.

Other barriers to preparation that were discussed included the limited amount of information that instructors get about students that require accommodations, the limited information available about the Disability Services Office (DSO), the apparent understaffing of the DSO and the challenge that large classes present to the instructor when the college administration is emphasizing retention. One suggestion included having DSO personnel and programs more visible to all students. In addition, several instructors mentioned that having open house tours of the disability support services area would invite faculty to know more about what goes on there and to meet the personnel responsible for the assessment and accommodation planning. Another instructor's comments are presented here:

> I wish that the ones who do the learning identifications, would meet with us and discuss what methods would help these particular students. Because every year it's a different thing. Like some students might not be able to pay attention in class; they can't sit still. Other students, umm, might take notes and notes but they are not the kind of notes that would help them with the course. So every learning disability, every person is an individual so their difficulties are very specific and very unique to them… They give you the sheet, you put it in your binder, you know they have to

write tests by themselves, most of the time it's just that they have to write

tests by themselves. I think we could be better prepared than we are.

Very positive comments were also presented regarding the support and work that the DSO is able to offer to both students and faculty. Instructors perceived that the office has been very busy and that with an increased number of personnel even more could be done to support students with LD and the faculty that teach them.

Disability Services, as I mentioned, that has been very helpful… Their

personnel create an environment where the students feel that they have

Disability Services in their corner, which is huge. It's a very good set-up.

Theme 2: Myths and misconceptions of Learning Disability. A second predominant theme was the myths and misconceptions that instructors had regarding learning disabilities and the impact on the student. Leading these misconceptions was the lack of a clear and accurate definition of the term learning disability. Of the twelve interviewees, six (50%) stated that they did not have a definition for learning disability. As the interview discussions progressed, the instructors used other ways of defining the term such as defining learning disability as all disability including individuals with hearing, visual or physical impairments, or "a student that needs more time on a test", in other words, defining the student with LD as one who uses accommodations. Two

teachers described students with cultural differences as having a learning disability and another included those who had been exposed to poor teaching. The following statements are examples from the data. The first three statements show how some instructors (3/12) did not dissociate learning disability from other types of disability.

Well first of all, one that comes to mind is a student with hearing impairment who brought an interpreter to class and helped the student out that way.

I had one girl with Cerebral palsy who was confined to a wheelchair and I had a deaf student this past semester who came with 2 interpreters.

A student that had hearing issues; I was flabbergasted, I didn't know what to do for her, she sat right in front of me and she read my lips, she had someone come in and take notes for her. She had that learning disability because she could not hear.

The next five quotes illustrate how interviewees defined learning disability as cultural or language differences, the result of poor teaching or simply the use of accommodations as a definition.

(long long pause) well, the disability that I see in my classes is just more of a language barrier than anything …so those are the students that I recognize as having a disability… is that they have a language barrier because it's tough enough to learn the language of medicine and then to come in with something that is hindering them in the first place. That is the only thing that I recognize as a learning disability.

a lot of students that are new Canadians, and I would consider somebody, even if they were an accomplished person in their own country but because of the language they are having trouble learning in Canada, so to me that's a learning disability.

Do you not ever wonder or not doubt that there are some students that are diagnosed with LD that the only reason they have a learning disability, is we are labelling it because we want to label things... because when they were younger maybe they did not have good teachers, maybe they were not in a good learning environment…. That it could be because they did not have good instruction in reading and comprehension when they were younger and this has caused the learning disability.

Learning disabilities, ummm, so it would be learning disability (pause). Well, the only experiences I have had are with students that come to us that have gone to the resource centre that have been assessed. So those students usually require special consideration for testing, so of course I have accommodated that, whether it's more time on the test or umm, whether it's to write the test in the learning centre so we would provide the test to them and they would write it there or ummm, or students came in and said they need more time for assignments, more time for doing lab work, umm, which I accommodate as well.

Defining?..ummmm, (pause) well, I don't know if I have a formal definition.

Four (30%) of the interviewees also defined students with learning disabilities by describing them as having a diverse learning style.

I will ask you how you learn and I will do my best to teach to you the way you learn… So as far as definitions I don't really have one, but just to do my best to service all my students equally and if there are certain needs additionally that my students have then I really feel compelled to help them.

A student who needs a special way of being able to learn. It's not that they can't learn, it's that we have to accommodate their way of learning, so that's how I see it.

It could be several things. Maybe they learn best visually, so they need a lot of visual stuff, maybe they need extra supports, like with note taking or .... I guess I am really limited, I guess.

During the discussion about the definition four instructors mentioned that LD was related somehow to a processing problem. These represent their comments:

The student is not as able to comprehend the information as well as a normal individual would be able to, and for whatever reason has trouble processing the information, as quickly or may be at all, depending on the degree.

A student who struggles to complete the curriculum in the way that an average student does. There is a student who cannot cope or has difficulty

processing, understanding, even reading, then I feel that that's a student

with a disability, whether I've been given the document or not.

… not able to learn at the rate, at the same level, as other students that are

in the classroom, someone who possibly processes information at a

different rate.

Of the twelve instructors interviewed only one mentioned IQ or that students with

LD would have normal or above normal cognitive abilities. This teacher had less

teaching experience but had been working in the field of disability for most of her career.

I should define it as a student who, regardless of their IQ, struggles with

assimilation of the information… I would say they are actually quite smart

and the issue is a disconnect somewhere that does not allow them to

assimilate the information.

In addition to understanding the definition of learning disability I wanted to know

if these educators had an understanding of the character traits of students with LD.

Things like organization, motivation, reading ability, affect and ability to read a social

situation can all be part of LD (LDAC, 2002). When asked about the work ethic of

students with learning disabilities, several interviewees commented on the lack of initiative and apparent laziness of the students.

> I don't want to use the term validity but that's what I mean, the validity of some of the learning disabilities or accommodations that I have seen because sometimes, not that I am a learning disabilities expert, but I think too many students are labelled as learning disabled that aren't learning disabled that are just either lazy or never wanted to spend time to learn how to study.

> I use the term carefully, a lazy teenager. So then is it appropriate for me to have the information, like diagnosis and impact of diagnosis, or should I just accept his learning disability as it is presented to me?

A further misunderstanding for some interviewees was the role of accommodations. The participants understood that accommodations were a legal requirement but they did not necessarily agree with the use of all accommodations. This can be seen in the three statements made by two veteran faculty members (20+ years of teaching experience):

> To what extent do we disable our students further by giving them too many assistive accommodations or do we insist that they work within the

constraints of their abilities but also within the broader picture of the

school? Because when they go into the workplace, like this one student

who has decided to move on, the accommodations he has in school, he is

not going to get them in the workplace.

I wonder if, for example, these students come to believe something that

may not necessarily exist as bad as they might say. It's not for me to say

that I don't believe that they have a disability, it's just that I wonder

perhaps, for example, some students need extra time to write a test but if

they were to write in class with the rest of the students, maybe not at first

but maybe over several times they might perform just as well.

I think there are some students that just use their accommodations, just so

they are noticed. I know that sounds really weird, but like I am the centre

of attention, and I say well "no you are not".

In addition, when asked about the variety of accommodations they were familiar

with the interviewees indicated extra time on tests and assignments and writing tests in

the student services department (all 12 or 100%), getting notes ahead of time (9/12 or

75%), scribing (1/12), using text-to-speech software (1/12), and using a note taker (2/12).

Theme 3: Going to school versus "real work". The third theme extracted from the

qualitative interviews surrounded the discrepancy that instructors described between the

school environment and "real work" for individuals with learning disabilities. In many of

the interviews the participants indicated that they felt angst knowing that students were

supported in meeting the learning outcomes of their college courses but often struggled

with the same learning difficulties in field work and sometimes did not pass the

placement component of the program. Others discussed that, with support, students with

learning disabilities were able to complete the placement courses but the instructors

displayed concern for the future work opportunities. These comments were made by

three instructors from the fields of nursing, business and engineering technology:

> A concern I have is for students that have difficulty listening and writing
>
> and are accommodated with a note taker, for example. I worry about
>
> when they are working that those same accommodations would not be
>
> available when they are working as a nurse. I don't believe that the work
>
> world will be that accommodating... if we are setting up unrealistic
>
> expectations.

> I think that the workplace is not as forgiving perhaps, or as
>
> accommodating, I should say, as what we are doing here. In the
>
> workplace everybody is under the gun for time and deadlines so if an

individual needs more time to write a test how is this same individual

going to perform on a task or project? That is how it works in the business

world; time-focused projects play a big role.

The question is once they graduate, they may have the skills, but are they

at a level where employers expect them to be at in terms of how fast they

can do things, because a lot of employers, our profession is.....time spent

on projects is so critical, because there's deadlines that have to be met and

they are absolutely fixed…. Time and a half just doesn't work in our

profession. There's no such thing.

This last comment from a nursing professor shows her concern for the field work

but also demonstrates how she felt that the workplace provided an environment where

students with learning disabilities could be successful, perhaps even more so than in the

academic setting.

If you have a student in clinical that is not doing well clinically.... because

they have problems, conceptually, then they are not going to pass clinical.

I think if you have students that do well clinically, they are probably going

to do ok. They ARE going to do okay in the field. So I guess with

nursing we have got that backup, that check in place, that if they can't do

well in school, and they can't do well clinically, then no they are not going

to do well in the profession. But if they are struggling in school but they

are excellent clinically, they probably will still do well, despite their

learning disability... So it doesn't mean that if they have a learning

disability they are not going to do well as a nurse, because some of them

are really good nurses.

One instructor from the skilled trades' program made comments about the availability of accommodations in the workplace.

They need to know that things don't stop at high school; that wasn't just a

high school thing you were allowed to have, but it is also a college and

university thing and it's a job place thing as well.

Theme 4: Self-advocacy and disclosure of LD. The final theme presented was one of self-advocacy, self-disclosure and stigma surrounding learning disability. Many of the interviewees discussed the number of students in their classes that appear to need accommodations but have not been identified or have chosen not to disclose their disability. As part of this discussion the majority of instructors (7/12) noted that stigma was perceived as a current and real problem for students with learning disabilities and that it affected the students' willingness to disclose their disabilities.

I will say "have you considered going to the Disability Services Office?" just asking the question and you know, there is still a social stigma, some students would not touch it with a 10 foot pole.

There is a big stigma still and it's left over from when you and I were in school, special ed, resource room, still can't learn, all of that stuff.

There is still a stigma attached right? To learning disabled, learning challenged, there is still a stigma.

I think the stigma is there and a lot of them don't want their peers to be aware that they have a difficulty.

A lot of them are embarrassed, not just the older, especially the older, but even some of the younger, they are embarrassed. They don't want anyone to see, anyone to know.

They're afraid to let other people know that they have some kind of struggle. I have had students say "no, I don't want to go. I don't really

want to be identified. I don't want to go there because then everyone will

know that I am writing my tests there instead of here.

In contrast, several interviewees (5/12) noted the strong advocacy skills and work ethic of some students with learning disabilities and that this generally led to success in their respective programs. Additionally, the lack of advocacy was perceived by many instructors as a student that lacks work ethic and just waits for others to help and "fix things". The following four statements illustrate these ideas:

I find that the majority do want to do well and they work hard and they try

hard. In some cases, I find that they work harder than students that may

have better grades and seem to catch on easier… I think the majority that

do go and get themselves assessed; I think that it says a lot about that

student. That they know they have a learning problem and they want to do

well.

I have seen students with learning disabilities who say "I am going to

work very hard and I know I have to overcome and things take me a little

longer but I am going to get there. I am going to do this". Really

committed and nothing's going to get in their way. And then there are

others who get stuck in their LD and then there's those that use it as an excuse.

I have had students hand me the sheet and then turn and walk away as quickly as possible, and if I try to talk to them they are not interested… I sometimes get the paper at the beginning of the semester and near the end of the semester I don't really know who that student is. But I have seen both. I have also had a student that came to my office and was very interested in all the help she could get.

My concern is that the students need to understand that they still do need to work and get the assignments done. And understand enough of my course to pass it. And not just coast on their accommodated programs and think that everything will turn out for the best…that everything is going to fall into place and they just sit back and let others do the work for them.

The qualitative data described here were gathered from twelve interviews conducted with community college instructors. Four overall themes were extracted from the interview data providing richer detail about their knowledge and attitudes regarding teaching students with learning disabilities.

Chapter 5: Discussion

The purpose of this study was to explore the preparedness of community college instructors to teach students with learning disabilities. Preparedness for teaching in inclusive classrooms is comprised of having the knowledge and attitudes to do the job (Sharma et al., 2006). The results of the study included the development of the *Instructor Preparedness Questionnaire* to measure college instructors' attitudes and perceived knowledge regarding students with learning disabilities. The instrument was originally comprised of 22 items; however, factor analysis indicated that 17 items could be retained on the two proposed factors, knowledge and attitude. The final instrument proved to have robust reliability and construct validity, clearly measuring these two factors.

I was able to add qualitative evidence from personal interviews to enhance our understanding of instructors' perceptions of teaching students with learning disabilities. The addition of qualitative data is recommended by other researchers who have completed quantitative studies in this field (Lombardi & Murray, 2011; Rao, 2004).   The questionnaire results, combined with the interview data, have provided meaningful insight into community college instructors' perceptions of their preparation to teach students with LD.

This discussion reviews the findings of my research regarding the knowledge and attitudes of college instructors in preparation for teaching students with learning disabilities and connects them to the current trends in the literature and legislation. It

examines the importance of preparing college instructors for teaching students with

learning disabilities and leads to suggestions for that preparation. The strengths and

limitations of this study, implications for practice and directions for future research are

also discussed.

Instructor attitudes and knowledge

The overall scores on the attitude and knowledge scales of the *Instructor*

Preparedness Questionnaire were both moderately positive; the means of 4.33 and 4.23

out of six, respectively, reflected the Likert scale choice "somewhat agree". This

indicated that instructors had a slightly positive attitude toward students with LD and a

positive outlook regarding their knowledge of LD and the needs of students with learning

disabilities. These results align with the previous findings of Murray et al. (2008), and

Skinner (2007) who found that faculty at U.S. colleges and universities demonstrated

positive attitudes and self-reported knowledge regarding students with learning

disabilities. Many comments made in my semi-structured interviews demonstrated that

the instructors had a general willingness and openness to students with diverse learning

needs. Several positive comments verified the instructors' readiness to provide

accommodations and work with students to best facilitate their learning.   However, there

were many comments made during the interviews that demonstrated significant gaps in

their understanding of learning disabilities and the needs of students.

Examining instructors' knowledge about the term "learning disability" proved to

be very insightful. Questionnaire item number three asked specifically about

understanding the term learning disability. The mean score was 5.03 out of six (agree),

indicating that instructors perceived that they had a good understanding of the term.

However, the qualitative interview data demonstrated something quite different. Clear

misconceptions of what a learning disability is and the characteristics of students with LD

were revealed in the interview statements. When asked to give a definition of LD many

instructors struggled to articulate their ideas or stated that they did not know a definition.

When prompted to describe a student with a learning disability, the instructors'

statements confirmed their misunderstandings. For example, only one instructor of the

twelve interviewed mentioned that these students have average or above average

intelligence, a key component of the definition of LD (LDAC, 2002). Several instructors

mentioned that the student with a learning disability would have cognitive processing

difficulties and some mentioned that these students may not be as cognitively capable as

their peers without LD. Although students with LD may have "impairments in

processing" (LDAC, 2002), this phrase has been misunderstood by some who interpreted

it to mean that the student is not as intelligent as those without LD. It is a problem when

instructors think of students with LD as being less intelligent or capable as it creates an

attitudinal barrier to fair and equitable education. Instructors need to clearly understand

the potential of students with learning disabilities to succeed in academic and work

settings. This supports the research of Zhang et al. (2010) who suggested that faculty

need more knowledge about students with disabilities and their abilities so they can

recognize the potential of these students.

Several other statements made in the interviews revealed misconceptions of the

term "learning disability. Some instructors defined the term learning disability as "a

student who needs more time on a test". Although this is a common accommodation

used by students with LD, it offers a limited definition, as it is only a small aspect of their

needs. In addition, it is problematic that several instructors described a learning disability

as learning the English language as a new Canadian, the result of poor teaching, or

having a hearing or physical disability. It's equally disconcerting for the student with a

different disability, such as a hearing impairment or cerebral palsy, to be defined as a

student with a learning disability. The definition of LD clearly describes that an LD is

not due to lack of motivation, cultural or language differences, or poor teaching (CCDI,

2002). It is important for faculty to identify the differences in various student

exceptionalities, as the students' learning differences and needs would be unique. It is

also valuable for instructors to understand the different manifestations of learning

disabilities. For example, many students with learning disabilities appear unmotivated or

unorganized as part of their disability (LDAC, 2002). Improving instructors' knowledge

about learning disabilities would, potentially, improve their ability to support the learning

needs of these students. This aligns with the research of Zhang et al. (2010) who

concluded that increased knowledge of disability positively influenced the instructors'

personal beliefs which in turn enhanced their supportive practices for students with

disabilities. Murray et al. (2009) also found that increased disability focused training

improved faculty attitude, knowledge and practice regarding students with learning

disabilities.

The results of my study indicated that the years of teaching experience had no

impact on knowledge or attitude. No differences in attitude or knowledge scores were

found for those in early career (less than five years), mid-career (six to fourteen years) or

later career (greater than 15 years) teaching. This implies that all instructors, regardless

of experience in teaching could benefit from more knowledge on this issue. Similarly,

the interview respondents had a wide range of teaching experience, from one to 23 years.

There were gaps in the knowledge of all instructors although those with more experience

were more likely to describe using supportive practices such as engaging the services of

the DSO and working closely with students with learning disabilities to support students'

success. These qualitative data suggest that exposure to students with disabilities over

many years can influence practice and yet there is a need for better understanding of

students with disabilities, regardless of years of teaching. This is consistent with

previous research by Zhang et al. (2010) and Vogel et al. (2006) who had similar

findings.

Finally, there was a small correlation between the knowledge and attitude scores. This was expected since, theoretically, an individual's attitude is influenced by his or her knowledge of a subject. Likewise, if instructors have more knowledge about learning disabilities you would expect their attitude and potentially their behaviours to be influenced. Salzberg (2003) and Vogel et al. (2008) identified that negative faculty attitude was the most significant barrier to success for students with disabilities and that improving faculty knowledge about disability and accommodations led to improvements in these attitudes. The knowledge and attitude scores in my study were both moderate (agree somewhat) and not high scores, creating a solid case for education and training. Improving instructor knowledge about learning disabilities through professional development and education will potentially lead to improved attitudes and ultimately influence student success.

Student self-advocacy and disclosure

One of the main differences in transitioning to post-secondary education from secondary school is that students with disabilities must self-disclose the nature of their disability in order to receive accommodations and self-advocate for access to their accommodations (Gregg, 2007). The instructors interviewed in this study discussed their frustration around student self-disclosure and self-advocacy. Many felt that there were students in most of their classes that were not forthcoming about their learning

disabilities. This is consistent with the findings in the literature: Burgstahler and Doe

(2006) determined that faculty found it difficult when students who were clearly in need

of learning supports and accommodations did not disclose their learning disabilities.

They also concluded that students were hesitant to disclose their disabilities due to fear of

being thought of as not as capable as students without disabilities. This further supports

the importance of faculty attitude as Bourke, Strehorn, and Silver (2000) and Denhart

(2008) found that students with disabilities were reluctant to disclose their disabilities or

discuss accommodations when they sensed a negative faculty attitude.

The word "stigma" was not used in my survey or interview questions; however,

several instructors used the term in the interviews and stated that they believed stigma

was a concern for students with learning disabilities. Some sensed that students may

choose not to disclose their LD because of the perceived stigma attached to having a

disability. Several strategies have been suggested in the literature to counteract students'

perceptions of stigma and improve student disclosure (Lombardi & Murray, 2011; Vogel

et al. 2008). The use of a syllabus statement inviting students to discuss their disability

with the instructor is one strategy identified in the research literature as having a positive

influence on students' willingness to disclose their disability (Murray et al., 2008).

Making a verbal statement to this regard, on the first day of class, has also been shown to

be effective (Murray et al., 2008; Vogel et al. 2008). In my questionnaire, the majority of

instructors indicated that they did not use an inviting syllabus statement, although most

indicated that they made a verbal statement on the first day of class. These welcoming statements are one way that instructors can begin to deconstruct attitudinal barriers, portray their willingness to work with students with disabilities, and influence students' success. It is important that these strategies become common practice for college instructors.

During the interviews, instructors also stated that they had concerns about the ability of students with LD to complete field placement courses and their ability to perform duties in the field after graduation. In the questionnaire, I asked the participants to rate their concern about the students' ability to do "real work" compared to school work. The questionnaire scores (somewhat agree to agree) reflected that instructors believed students could achieve academically because their accommodations were readily available but were not as likely to be successful in the work place. This is congruent with the qualitative findings from the interviews. The fact that instructors articulated concern about the ability of students with LD to effectively complete "real work" is, in itself, a form of stigma, and although meant to reflect their concern for the students, it can be interpreted as doubt regarding the students' potential for success.

Furthermore, support for individuals with disabilities competing and succeeding in post-secondary school and the workplace are major components of the recent Accessibility for Ontarians with Disabilities Act (AODA) legislation. AODA requires post-secondary institutions to provide training for their educators regarding program/

course design, delivery, and instruction with the goal of improving accessibility and success for students with disabilities (Ministry of Community and Social Services, 2008). In addition, AODA aims to even the playing field in the workplace for individuals with disabilities through increased access to workplace accommodations. Under this legislation, workplaces must develop individual accommodation plans for employees with disabilities. The field placement courses that many college students complete as part of their educational requirements present a good starting place for breaking down barriers that exist in the workplace for individuals with learning disabilities. However, this can only move forward if educators have the knowledge and attitudes to support students with learning disabilities in their field placement courses and recognize the potential success these students can have in their prospective workplaces.

Preparedness to teach students with LD

Both quantitative and qualitative results indicated that instructors felt underprepared for the task of teaching students with LD and expressed a need for better preparation. When asked about preparation in the questionnaire, only 40% of respondents indicated that they had previously taken some training specific to teaching students with LD. When asked if they believed they had the skills to teach students with LD the mean Likert scale response was "somewhat agree" (4.3 out of six), implying that most instructors did not feel entirely confident in this area. This was further verified by

information shared in the interviews. When asked if they felt prepared to teach students

with learning disabilities the interview responses ranged from "yes", to "somewhat" to

"absolutely not".   This range of responses is perhaps not surprising given that almost all

interviewees stated that they had learned most about students with LD through firsthand

teaching experience and had little preemptive training. They described their preparation

as predominantly informal and as having "occurred on the job".   Furthermore, they felt

the need for preparation was even more urgent now given the increased number of

students with LD on campus. Statistics have indicated that there are an ever increasing

number of students with LD attending community colleges in Ontario (CCDI, 2010).

The instructors interviewed in my research also described an increased number of

students with LD at this particular college. They felt there was an impact on the teaching

and learning practices in their classrooms as students with LD often required considerable

support and yet the class size in general continued to increase. The faculty described how

they felt that the administration did not appreciate the challenges they faced in trying to

meet the needs of a diverse group of learners when the class size continued to increase.

When asked what would help them to be more prepared for teaching students with

LD, the majority of instructors mentioned professional development and more interactive

dialogue with the Disability Services Office (DSO). Several discussed how a better

understanding of the types of LD, the needs of students, and the process of identification

and accommodation planning would be helpful. Interviewees also stated that it would be

beneficial to have more information from the DSO regarding the individual student diagnosis and needs. Privacy legislation limits the amount and type of information that is disclosed to instructors about their students' disabilities; however, this point brings to light some gaps in the communication process. More importantly, this suggests that increased dialogue between instructors and the DSO could be an effective avenue for improving instructors' knowledge and subsequently, their attitudes and practices regarding students with LD.

Similarly, Murray, Wren and, Keys (2009) determined that the type and amount of prior disability-focused training impacted university faculty attitudes and behaviours. They concluded that post-secondary institutions needed to provide frequent opportunities for professional development using a variety of delivery platforms including workshops and online information. Likewise, Jensen et al. (2004) and Vogel et al. (2008) provided insight into the types of training and support that faculty suggested as being most helpful and accessible given their time and workload parameters. Faculty expressed a need for more information and dialogue with the DSO, understanding of LD and accommodations, helping students to self- advocate, and more information about UDL (Jensen et al. 2004; Vogel et al. 2008). My results substantiate the need for more training on learning disabilities for community college instructors in Canadian colleges.

Furthermore, one of the best practice strategies for teaching diverse learners is Universal Design for Learning (UDL; Lombardi & Murray, 2011). When I asked

instructors about their knowledge and use of UDL strategies they demonstrated limited understanding of the concept. Although a few of those interviewed stated that they had heard the term UDL, none could describe it or how it could be used to benefit students with LD. Interestingly, section 16 of the AODA legislation states that educators must be trained in accessible course design and delivery. Training developers are looking to UDL as a proven and pragmatic strategy for improving accessibility (OCU, 2012). Furthermore, the AODA requirements are fundamentally supported by the current paradigm shift from the medical model of disability to the social model. The social model, and more specifically critical disability theory, can provide a framework for training educators about disability and accessibility. Framing disability in the social model will broaden our understanding of disability and change the approach to services offered to students with disabilities by college counselors, administration and faculty. It is crucial for college educators to have information about these perspectives on disability and UDL in order to address the social and environmental barriers to education, improve accessibility to college courses, and meet the training AODA requirements. My research verifies that instructors may not have this information but are interested in obtaining it.

Faculty perceptions of Disability Services Office

As part of this research I was also interested in exploring instructors' attitudes and perceptions of the support offered by the Disability Services Office (DSO) to students

with learning disabilities and to the instructors themselves. Previous research has found

that faculty members are more willing to support students with disabilities when they

perceive that they have sufficient support from the Disability Services Office at their

institution (Zhang et al. 2010). Two specific items on my questionnaire asked the

participants their perceptions of the role of student services. Item #24: "I feel that I can

get adequate support from Student Services about students with learning disabilities" and

Item #11: "If I have a question about a student with a learning disability or their

accommodation plan I would go to Disability Services to seek support". Neither item

was included in the knowledge or attitude scales as they did not load clearly on either

scale. These two questions had means above 4 indicating a positive response. The

response for item 24 is only 4.35 out of six, indicating somewhat agree. This corresponds

with the qualitative data gathered in the interviews where most participants indicated they

would ask student services personnel to assist them in understanding the accommodation

needs of a student with LD but they also felt the support from student services could be

enhanced. Many interviewees stated that they would like more information from the

disability office rather than simply the accommodation plan. Most instructors understood

that because of privacy legislation they were privy to a limited amount of information

about the students; however, this does raise some interesting questions for counselors and

administration of disability services to consider. For example, is there a way to provide

more information to instructors about the specific student's accommodation needs? How

can the communication amongst all stakeholders be improved? Some interviewees suggested that having a greater understanding of the identification process in general would help them.

Additionally, when asked to describe the accommodations they were familiar with, the interviewees were limited in their responses, mainly mentioning "more time on tests", "write tests in student services office", and "need a note taker". The interviewees did not elaborate on why students needed these accommodations but generally just stated that it was due to "a processing problem", or they "processed information more slowly". Overall instructors perceived that the DSO personnel were helpful to students but, more contact would ultimately improve student support. Instructors expressed a willingness and openness to learn more about the accommodation process and about students with disabilities; however, they expressed that the DSO would be responsible for initiating and distributing this information. These results and comments will be helpful to the college administration and DSO personnel when planning future professional development for faculty and considering best practices for faculty and student support.

Strengths and Limitations of the Study

It is important to note that although this study achieved its purpose of investigating the preparedness of community college instructors for teaching students with learning disabilities, it is not without limitations. First, the research was conducted

at one large community college in southwestern Ontario which limits the generalizability

of the results. Despite being limited to one college, however, the data were collected

from a diverse sample of college instructors. The sample of instructors completing the

questionnaire was very representative of the college instructor population with

proportional representation from all eight schools. The college instructors in the

questionnaire sample indicated their years of teaching to be between 0.5 and 40 years

with the groupings of early, mid and late career being fairly equal. This broad range was

representative of the overall college faculty population and the equal numbers in each

group allowed for comparison between groups based on years of teaching. Interview

participants were also a representative group with six male and six female instructors

volunteering to be interviewed, six out of the eight college schools represented and years

of teaching ranging from one to twenty-three. Although generalization is limited, it is a

reasonable assumption that this college faculty is similar to that of other community

colleges across Ontario.

A second limitation of this study is the voluntary nature of the participant

selection. Participants volunteered for the questionnaire and subsequently, the interview

process and therefore the results are limited to this self-selected group and the

perceptions of instructors who did not participate in the study remain unknown.

Although this reduces the external validity of the results, as mentioned above, the sample

size was adequate and very representative of the entire college instructor population in terms of schools of study and years of teaching.

Furthermore, using self-reported data such as questionnaires and interviews includes the risk that participants will respond with socially desirable answers. When speaking about sensitive issues such as disability and inclusion, it is possible that being aware of current societal expectations and legal requirements can influence participants to answer in a more positive and desirable manner. To counteract this possibility, participants were assured of their anonymity and confidentiality. In conducting the interviews, I noticed that instructors spoke candidly and genuinely about their experiences, both positive and negative, regarding students with LD. The fact that many of their answers were not even close to socially desirable also supports the honesty of their responses.

A final strength of this study is the use of mixed methods. Many studies in the literature were conducted at U.S. colleges and universities and investigated the faculty perceptions of students with learning disabilities using questionnaire data collection. Many of these researchers mentioned that the next step would be to collect more in depth qualitative data (Lombardi & Murray, 2011; Rao, 2004). The qualitative data collected in my study not only gave a richer description of faculty understandings and perceptions but it also revealed many important misconceptions. The comparison of qualitative and

quantitative results allowed me to identify gaps in instructor preparation and led to a more complete answer to the research questions.

Suggestions for Future Research and Implications for Practice

The *Instructor Preparedness Questionnaire* developed for this study was based on questionnaires from the background literature; however, it was designed to more directly measure the concept of preparedness: having the knowledge and attitudes to teach students with LD. After collecting the quantitative data and completing a factor analysis, the final survey instrument used for further quantitative analysis was comprised of 17 questions in total with nine questions making up the knowledge scale and eight questions comprising the attitude scale. This instrument was proven to have robust reliability and construct validity. The next step would be to further verify the validity and reliability of the scale on a wider population of college instructors and generalize its' use to include university faculty as well. The scale is short and easy to administer. The use of this instrument opens several avenues for further investigation. It could be used to study the impact of disability-specific training and professional development programs on faculty knowledge and attitudes in a variety of post-secondary settings.

Many instructors interviewed recognized a need for, and indicated an interest in, professional development training about student needs and effective strategies. This presents an interesting dilemma since the quantitative scores indicated that instructors

generally have positive perceptions about their knowledge especially regarding the definition of LD and the needs of students with LD. Comparing the positive quantitative results to the qualitative information gathered from the interviews revealed a clear contradiction. Misconceptions about the meaning of the term LD, as well as the general characteristics, and needs of students with LD were evident. Therefore, this dilemma is presented: how does a voluntary professional development campaign reach community college instructors when their general sense is that they already have the knowledge they need? Will they see the need for improving their knowledge? How will improved knowledge affect practice? Any professional development campaign will need to have a creative approach in order to effectively influence instructors and entice them to participate in professional development, recognize the need for and importance of this kind of disability-specific training. In previous research, Murray, et al. (2009) stated that post-secondary institutions needed to provide ongoing and repeated opportunities for faculty to develop their knowledge about the needs of students with LD and classroom support strategies. Burgstahler and Doe (2006) and Denhart (2008) recommended that training focus on improving faculty knowledge of disabilities, legislation, and use of accommodations while maintaining academic standards, as well as teaching strategies that increases student – faculty communication. They concluded that improving this subset of skills can improve the educational and career outcomes of students with disabilities.

Another implication for professional development is the need for understanding and applying the principles of UDL as a best practice strategy in the college classroom. The congruency of UDL with the AODA legislation and requirement for educator training provide a perfect opportunity for colleges to present this type of professional development to their faculty. If instructors are better prepared to teach the diverse student population attending college programs, there will be a positive impact on student retention and success which is in the best interest of all stakeholders.

Conclusions

It is clear from this research that college instructors are underprepared for the task of teaching students with learning disabilities, despite having generally positive attitudes towards, and self-rated knowledge about, learning disabilities. This research has helped describe the gaps in community college instructors' understanding of learning disabilities and best practices for supporting student needs. This is especially important considering the increased number of students with learning disabilities enrolling in community colleges in Ontario, and the emphasis that the AODA legislation places on training educators in order to improve accessibility to post-secondary education.

This research study has made an important contribution to the existing literature by adding the community college perspective, as well as a Canadian perspective to the research exploring the preparation of post-secondary educators for the task of teaching

students with learning disabilities. In addition, the development of the *Instructor*

Preparedness Questionnaire has provided a robust instrument that will be useful in future

research. Finally, this research begins an important dialogue on the need for educator

training and development in preparing for diverse and inclusive college classrooms.

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Appendices

Appendix A: Instructor Preparedness Questionnaire

1. Please indicate your number of years of college teaching experience: _____

2. Indicate the programs in which you currently teach: _(drop down box on line version) _____

   Please rate each of the following statements according to this 6 point scale:

   6= strongly agree
   5= agree
   4= agree somewhat
   3= disagree somewhat
   2= disagree
   1= strongly disagree

                                                                    strongly disagree   **strongly agree**

3. I understand the term "learning disability".   1   2   3   4   5   6

4. I have a strong understanding of the needs of students
   with learning disabilities.   1   2   3   4   5   6

5. I understand my legal responsibility as an instructor to provide
   accommodations for a student with a learning disability.   1   2   3   4   5   6

6. I include a statement on my syllabus that encourages students
   to meet with me to discuss their accommodation and
   learning needs.   1   2   3   4   5   6

7. I make a verbal statement on the first day of class inviting students
   with disabilities to meet with me to discuss their learning needs.   1   2   3   4   5   6

8. I have attended specialized training to acquire knowledge about
   students with learning disabilities and/or how to teach them.   1   2   3   4   5   6

9. I am aware of assistive technology that students with learning
   disabilities can use to improve their performance in my course.   1   2   3   4   5   6

10. Tests and other assessments that I administer in my courses are
created with the diverse learning needs of students in mind. 1   2   3   4   5   6

11. If I have a question about a student with a learning disability
or their accommodation plan I would go to the Disability Services
Office to seek support.   1   2   3   4   5   6

12. I spend a disproportionate amount of time making
teaching/testing accommodations and assisting
students with disabilities in my courses.   1   2   3   4   5   6

13. Providing classroom and testing accommodations to students with
learning disabilities is unfair to students
without learning disabilities.   1   2   3   4   5   6

14. I believe I have the skills necessary to teach students
with learning disabilities.   1   2   3   4   5   6

15. The college is an accessible learning environment
for students with learning disabilities.   1   2   3   4   5   6

16. When students with learning disabilities use accommodations
it compromises the integrity of the curriculum.   1   2   3   4   5   6

17. I believe students with learning disabilities can be
successful at the college level.   1   2   3   4   5   6

18. Students with learning disabilities may be able to do
the school work using their accommodations but I am
concerned that they will they will have trouble in the
real work place.   1   2   3   4   5   6

19. I find students with learning disabilities wait until they are
    not doing well in class to come and talk to me and then I
    question whether they truly have a LD.   1   2   3   4   5   6

20. Professionals with learning disabilities may be as effective
    as professionals without LD in the same job/ occupation.   1   2   3   4   5   6

21. Students with a learning disability use it as an
    excuse when they are not doing well in my class.   1   2   3   4   5   6

22. Having students with learning disabilities in the
    classroom reduces the quality of the education
    that other student receive.   1   2   3   4   5   6

23. Students with learning disabilities are advocates
    for their learning   1   2   3   4   5   6__

24. I feel that I can get adequate support from Student Services
    about students with learning disabilities.   1   2   3   4   5   6

> If you are interested in participating in a follow-up interview regarding teaching students with learning disabilities please contact the researcher at
> _____.

Appendix B: Interview Questions

Main Questions:

1. Can you describe some of your experiences with students with Learning Disabilities?
2. How would you define the term "learning disability"?
3. Are you prepared to teach students with LD? Why?
4. What concerns do you have about students with LD in the college system?

Probing Questions

1. What accommodations are you familiar with students using?
2. How would you describe the work ethic of students with LD?
3. What do you know about Universal Instructional Design?
4. Do you feel there is anything you can do to assist students with LD?
5. Is there anything that you think would help you in teaching students with LD?

6. In addition I can add the following suggestions that are mentioned in the literature:
   a. different types of learning disabilities and strategies for teaching
   b. implementing Universal Instructional Design to improve access and diversify teaching strategies.
   c. the roles and responsibilities of the Student Disability Services (Learning Commons) counsellors, instructors, and student.
   d. legislation and college policies and procedures regarding students with learning disabilities.

Appendix C: Mean Scores, Standard deviations and N for questionnaire items

Questionnaire Item number	Description of item	Mean	Std. Deviation	N
1	Years Teaching	12.653	9.23530	98
3	Understand term	5.0300	.98939	100
4	Understand needs	4.4950	1.01611	101
5	Understand legal resp	4.9899	1.00504	99
6	Syllabus statement	2.8687	1.44735	99
7	Statement first day	3.7579	1.75472	95
8	Specialized training	3.5104	1.78293	96
9	Assistive technology	4.3093	1.21072	97
10	Diverse tests	3.9896	1.36494	96
11	Student services question	5.1368	.94092	95
12	Time Spent	2.6667	1.27621	101
13	Accommodations are unfair	2.1881	1.30164	101
14	Have skills	4.1546	1.09297	97
15	Accessible learning environment	4.3878	1.10885	98
16	Integrity of curriculum compromised	2.4455	1.28433	101
17	Students can be success	4.9691	.92931	97
18	concern about real work	4.2500	1.22578	100
19	students wait, question LD	3.3711	1.42390	97
20	Professional LD effective	4.6061	1.02835	99
21	Use LD as excuse	2.7113	1.27442	97
22	LD reduces quality of education	2.0102	1.06968	98
23	Advocates for self	3.8687	1.06567	99
24	Support from Student Services	4.3500	1.20918	100

Appendix D: Ethics Approval

THE UNIVERSITY OF WESTERN ONTARIO
FACULTY OF EDUCATION

Western
Education

USE OF HUMAN SUBJECTS - ETHICS APPROVAL NOTICE

Review Number: 1112-2
Principal Investigator: Alan Edmunds
Student Name: Kathryn Hansen
Title: *College Instructors' Preparedness to Teach Students with Learning Disabilities*
Expiry Date: March 31, 2012
Type: M.Ed. Thesis
Ethics Approval Date: January 30, 2012
Revision #:
Documents Reviewed &
Approved: UWO Protocol, Letter of Information & Consent

This is to notify you that the Faculty of Education Sub-Research Ethics Board (REB), which operates under the authority of The University of Western Ontario Research Ethics Board for Non-Medical Research Involving Human Subjects, according to the Tri-Council Policy Statement and the applicable laws and regulations of Ontario has granted approval to the above named research study on the date noted above. The approval shall remain valid until the expiry date noted above assuming timely and acceptable responses to the REB's periodic requests for surveillance and monitoring information.

During the course of the research, no deviations from, or changes to, the study or information/consent documents may be initiated without prior written approval from the REB, except for minor administrative aspects. Participants must receive a copy of the signed information/consent documentation. Investigators must promptly report to the Chair of the Faculty Sub-REB any adverse or unexpected experiences or events that are both serious and unexpected, and any new information which may adversely affect the safety of the subjects or the conduct of the study. In the event that any changes require a change in the information/consent documentation and/or recruitment advertisement, newly revised documents must be submitted to the Sub-REB for approval.

for Dr. Alan Edmunds (Chair)

2011-2012 Faculty of Education Sub-Research Ethics Board

Dr. Alan Edmunds	Faculty of Education (Chair)
Dr. John Barnett	Faculty of Education
Dr. Farahnaz Faez	Faculty of Education
Dr. Wayne Martino	Faculty of Education
Dr. George Gadanidis	Faculty of Education
Dr. Elizabeth Nowicki	Faculty of Education
Dr. Immaculate Namukasa	Faculty of Education
Dr. Kari Veblen	Faculty of Music
Dr. Ruth Wright	Faculty of Music
Dr. Kevin Watson	Faculty of Music
Dr. Jason Brown	Faculty of Education, Associate Dean, Research *(ex officio)*
Dr. Goli Rezai-Rashti	Faculty of Education, Associate Dean, Graduate Programs *(ex officio)*
Dr. Susan Rodger	Faculty of Education, UWO Non-Medical Research Ethics Board *(ex officio)*

The Faculty of Education   Karen Kueneman, Research Officer

Copy: Office of Research Ethics

Appendix E: Letter of Information and Consent

College Instructors' Preparedness to Teach Students with Learning Disabilities

LETTER OF INFORMATION

My name is Kathryn Hansen and I am a Master's of Education student at the Faculty of Education at The University of Western Ontario. I am currently conducting research into community college instructors' knowledge, skills and attitudes about teaching students with learning disabilities and would like to invite you to participate in this study.

The aims of this study are to investigate how college instructors feel about their preparation and abilities to teach the increasing number of college students with learning disabilities.

If you agree to participate in this study you will be asked to complete a short survey on line or in hard copy (your choice). The survey is 24 questions using a rating scale and takes about 10 minutes to complete. If you are interested in participating in a follow-up interview you can indicate this on the last question of the survey. The interview will take place at this college. It will take about one hour and will explore your thoughts about teaching students with learning disabilities in more detail.

The information collected will be used for research purposes only, and neither your name nor information which could identify you will be used in any publication or presentation of the study results. All information collected for the study will be kept

confidential. All data collected will be kept in a secure location. All data collected will

be destroyed within five years of the study completion.

There are no known risks to participating in this study.

Participation in this study is voluntary. You may refuse to participate, refuse to

answer any questions or withdraw from the study at any time with no effect on your

employment status.

Completion and submission of the survey indicates your consent to participate in

this part of the study.

If you have any questions about the conduct of this study or your rights as a

research participant you may contact the Office of Research Ethics, The University of

Western Ontario.

This letter is yours to keep for future reference.

Thank you,   Kathryn Hansen

Appendix F: Consent Form

College Instructors' Preparedness to Teach Students with Learning Disabilities

CONSENT FORM FOR INTERVIEW PARTICIPATION

I have read the Letter of Information, have had the nature of the study explained

to me and I agree to participate. All questions have been answered to my

satisfaction.

Name (please print):

_____

Signature: _____   Date: _____

Name of Person Obtaining Informed Consent: _____

Signature of Person Obtaining Informed Consent: _____

Date: _____

Appendix G: Thesis Proposal approval

	FORM A
Faculty of Education **Graduate Programs & Research Office** Western Education	[Print Form] [Reset Form]

APPROVAL OF M.Ed. THESIS PROPOSAL

If the proposed research does not involve human subjects or the direct use of their written records, video-tapes, recordings, tests, etc., this signature form, along with ONE copy of the research proposal should be delivered directly to the Graduate Programs & Research Office for final approval.	If the proposed research involves human subjects, this signature form, along with ONE copy of the research proposal and Ethical Review Form signature pages (Section 1.1 to 1.7) must be submitted to the Graduate Programs & Research Office for final approval.

IT IS THE STUDENT'S RESPONSIBILITY TO PROVIDE A COPY OF THE RESEARCH PROPOSAL (INCLUDING REVISIONS) TO THE THESIS SUPERVISOR AND ALL MEMBERS OF THE ADVISORY COMMITTEE.

Student's Name: Kathryn Hansen   **Student #:** _____

Field of Study: Educational Psychology/Special Education

Title of Thesis: Community College Instructors' Preparedness

Name of Thesis Supervisor: Debra Dawson

Name of Thesis Advisory Committee Member: Jacqueline Specht

DOES THIS RESEARCH INVOLVE THE USE OF HUMAN SUBJECTS: ● Yes   ○ No

APPROVAL SIGNATURES:

	Date:
Graduate Student:	Sept 20/12
Thesis Supervisor:	Sept 20/12
Advisory Committee:	Sept 20/12
Ethical Review Clearance:	Jan 30/12
Ethical Review Number: 111 2-2	
Associate Dean **Graduate Programs & Research:**	Feb 1, 2012

A STUDENT MAY PROCEED WITH RESEARCH WHEN A COPY OF THIS FORM CONTAINING ALL APPROVAL SIGNATURES HAS BEEN RECEIVED.

A copy of this proposal may be made public and kept on a two-hour reserve in the Faculty of Education Library.

Version Date: January 2010

The University of Western Ontario   Faculty of Education   Graduate Programs & Research Office

Curriculum Vitae

Name: Kathryn Hansen

Education: The University of Western Ontario
London, Ontario, Canada
2013 M.Ed. Educational Studies

University of Waterloo
Waterloo, Ontario, Canada
1986 Bachelor of Science (Kin)

**Honours and
Awards:**   Centre for Inclusive Education Research Award (2012)

**Related Work
Experience:** Professor/ Program Coordinator
St. Clair College of Applied Arts and Technology
2006- present