OCCUPATIONAL HEALTH AND SAFETY EDUCATION FOR YOUTH: THE PROCESS OF CONSTRUCTING KNOWLEDGE IN THE HIGH-SCHOOL CURRICULUM

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Occupational Health and Safety Education for Youth:

The process of constructing knowledge in the high-school curriculum

by:

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Abstract

In 1998 the Government of Newfoundland and Labrador (NL) introduced the Workplace Safety 3220 course to the provincial high school curriculum. Similar to occupational health and safety (OHS) courses introduced in other jurisdictions, this elective course aims to reduce occupational accidents and injuries among young workers. It is the first OHS curriculum that has been designed specifically for young workers in Newfoundland and Labrador. In this thesis I describe the findings of my MA research, which examined the ways in which health and safety knowledge is constructed in the high school curriculum. I used a multi-methods approach to examine the content of the Workplace Safety 3220 course. My findings reveal certain assumptions, biases and omissions embedded within the curriculum about what OHS means, and how it is experienced by different types of workers. The curriculum uses a technical and scientific approach to present the OHS knowledge, on rules, regulations, rights and responsibilities in relation to various types of occupational hazards. By using this technical and scientific approach, the curriculum does not effectively capture workers' experiences of OHS or how the socio-economic and organizational contexts mediate accidents, injuries and management responses to these. There is a bias in the curriculum towards the OHS issues associated with blue-collar, industrial work, which is dominated by adults and male workers. The work that youth and women do is underrepresented, as are white-collar and pink-collar occupations, and occupations in rural and non-industrialized areas. Using a social constructivist approach, I argue that these findings reflect the impact on the curriculum of power relations and struggles within the government and of wider socio-economic structures, such as public and private institutions, businesses, and the education system. As a consequence to these biases and omission in the

curriculum, young workers and female workers in particular are left in a disadvantaged position within the OHS curriculum. I argue that one of the first steps to subverting these power relations and power struggles is to examine textual knowledge and bring to light how such knowledge is produced.

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Chapter 1 OHS Education for Youth in Canada

1.1 A background to youth employment and OHS education programs

Youth employment has become an integral part of social and economic structures in most Western countries (Australian Bureau of Statistics, 2005; Betcherman & Leckie, 1997; European Agency for Safety and Health at Work, 2004; Zierold, Garman, & Anderson, 2004). Young workers' occupational health and safety (OHS) has increasingly become a common concern among researchers, governments and policy makers (Rubenstein, Sternbach, & Pollack, 1999; West, de Castro, & Fitzgerald, 2005), as well as among young workers themselves (Brisbois, 2003). Canadian researcher E. McCloskey (2008) identifies at least three factors that have driven this concern and focus on the OHS of young workers. Firstly, statistics suggest that young people tend to be employed in precarious types of jobs that are often characterized as shift work, on-call work, temporary work, which are often associated with unfavourable working conditions and health risks (Loughlin, Barling, & Kelloway, 1999, 19). Compared to adult workers, youth often have significantly higher risks of experiencing workplace fatality, injury (Zierold & Anderson, 2006, 525) and adverse effect on their mental health (Mortimer, Harley, & Staff, 2002; Shanahan, Finch, Mortimer, & Ryu, 1991). Many studies demonstrate that these higher risks are associated with youth's attitudinal characteristics, such as their eagerness to please, willingness to take challenges and risks, and vulnerability to peer pressure (Lavack, 2008; West, 2005). Others attribute it to youth's lack of experience due to their age, work tenure, and often due to their lack of training (Breslin, 2007). Secondly, McCloskey suggests that "there is a heightened sense of tragedy when a young person is killed or seriously injured at work,…families of victims

have become more vocal in seeking awareness and accountability" (42). Families that have lost young workers are increasingly becoming more effective in advocating for the improvement of working conditions for youth. Thirdly, is the increasingly accepted view that a specific focus on young workers' OHS can lead to a long-term positive impact on the adult workplace health and safety culture. Preparing young workers with knowledge on rights, responsibilities, and occupational risks, and improving work environments can in the long run contribute to the reduction in injury rates, and also build a safety conscious workforce (McCloskey, 2008).

Even though extensive studies have been conducted on adult workers' OHS, the findings from these studies cannot always contribute to a comprehensive understanding of the distinct issues among young workers. Many studies show significant differences between youth and adults, including in the experience of work across these two groups (Krosnick & Alwin, 1989; Lorence & Mortimer, 1985). These differences include levels of education and skills, patterns of employment (Zakocs, Runyan, Schulman, Dunn, & Evensen, 1998) and occupational injuries and illnesses (Breslin & Smith, 2005; Mitchell, Franklin, Driscoll, & Fragar, 2002), individuals' perceptions and knowledge of risks, and the type and size of the employing organization and its ability to maintain proper OHS standards (Breslin, Polzerb, MacEachena, Morrongielloc, & Shannon, 2007; Messing, 1998; Zakocs et al., 1998).

The rates of occupational injuries and fatalities among youth have become a growing concern among many authorities in post-industrialized countries (Bierma, 2000; Kosny, 2005). One of the government initiatives in Canada and elsewhere that reflects this increased concern is the introduction of formal OHS education and training in the school systems, particularly at the junior and high school level (McCloskey, 2008; Shearn, 2006; Kosny, 2005; Lee, Westaby, & Berg, 2004). Education and training are frequently described as two of the key elements that can

address the problem of high injury rates among youth, and help to build a culture of prevention and safety (European Agency for Safety and Health at Work, 2004; Workers' Compensation Board of BC, 2003). At the 2007 annual meeting of Canadian ministers responsible for labour, the participants highlighted the seriousness of youth occupational injuries, and emphasized their mandate to address the issue through youth education. They argued that "education delivered to students by instructors plays a crucial role in raising awareness about occupational health and safety issues among youth" (Canada News Centre, 2007).

An investigation into the jurisdictional initiatives reveals that every Canadian province and territory has at least one or more OHS education or training program specifically designed and targeted at youth. These range from school-based courses, to online courses offered by the compensation boards, and workshops provided by industry safety associations. For example, the e-course introduced by Ontario's Workplace Safety and Insurance Board (WSIB), *Health & Safety 101*, is offered in Ontario, Nova Scotia, Manitoba and other places (Workplace Safety Insurance Board, 2005). Another program with considerable popularity is the *Passport to Safety Program*, in which youth can take online tests based on a curriculum set by safety experts from across the country. Upon completion of the test the learner is presented with a transcript that can be attached to their resume as proof of their basic knowledge of OHS (Passport to Safety, 2009).

In 1998, three of the five school districts in the province of Newfoundland and Labrador[1] saw the introduction of a similar curriculum and certification program, called Workplace Safety 3220. Although the Newfoundland and Labrador Employer's Council initiated the program, the primary responsibility for administering the course was transferred to the Workplace Health, Safety and Compensation Commission (WHSCC) in 2004. Other organizations involved in the

[1] The three school districts include the Eastern, Western, and Nova Central. The Labrador School District and the French Immersion Program were excluded from this initiative.

initial development of the course included the former Avalon West School District[2] and the Government of Newfoundland and Labrador (Government of Newfoundland and Labrador, 2004). The course curriculum consists of the Workplace Safety 3220 textbook, the curriculum guide, and a textbook recommended video entitled, *Things You'd Better Know to Work Smart, to Work Safe*. Students receive grades for the completion of this elective course, and since 2004 they also receive certificates as workplace health and safety representatives. According to the WHSCC, the purpose of the course is to create and increase young students' awareness of OHS, to reduce their risk of occupational injuries and also to increase their employability. The course is also intended to develop safety habits among youth outside of their work environment (WHSCC, 2004).

The course is normally offered to students in grades 11 and 12 (also known as levels two and three). In some schools it is also offered to grade 10 and level four students.[3] The province-wide pattern indicates a general decline in student enrolment in this OHS course over the past several years (WHSCC Prevention Services Department, 2007). Since its inception in 1998, the number of schools that offer this course and the number of students who choose it as an elective have fluctuated. As Table 1 demonstrates, in its first year the number of students enrolled was less than 300, while enrolment was greatly increased in each of the next 6 years. By the 2004-2005 academic year, enrolment rose to 1580 students (in 45 schools). However, student enrolment fell steadily in the following years, with 1097 students (in 34 schools) enrolled in the 2007-2008 academic year (WHSCC Prevention Services Department, 2007). It is evident that the

[2] The former 11 school districts in the province were consolidated into five districts in the 2004-2005 academic year in response to student decline. The Avalon West School District now fell under the Eastern School District (Government of Newfoundland and Labrador, 2004).

[3] Level four consists of students who require an additional year after grade 12 (or level three) to complete their graduation requirement due to learning disabilities or failure to receive passing grades.

number of participating schools declined over the years contributing to the reduced number of students enrolled in the course. The WHSCC suggested that one possible reason for this variability from year to year is the fact that it remains a 'local' course, which is introduced in schools through local initiatives of instructors, school boards, and other interest groups (Greenslade, 2007). The introduction and continuation of the course depend on whether or not the school board has sufficient funding, and sufficient interest from the instructors to teach the course. Another possible reason is the fact that Newfoundland and Labrador's demographic patterns are characterized by an aging population, low birth rate, and decline in the overall number of schools and the number of students enrolled in schools (Community Accounts, 2006).

Table 1: The Number of Schools Offering Workplace Safety 3220 and the Number of Students Taking the Course. *Source: WHSCC Prevention Services Department (2007).*

Year	Number of Schools	Number of Students
1998 - 1999	Not available	275
1999 - 2000	Not available	882
2000 - 2001	Not available	1185
2001 - 2002	Not available	1251
2002 - 2003	Not available	1346
2003 - 2004	50	1373
2004 - 2005	45	1580
2005 - 2006	39	1331
2006 - 2007	39	1317
2007 - 2008	34	1097

1.2 Statement of the problem

The Workplace Safety 3220 course was introduced in the Newfoundland and Labrador education system as a strategy to reduce the high rates of occupational injuries among youth. Like any other school course, this OHS course consists of a set curriculum that includes the textbook, and

its corresponding curriculum guide. Even though textbooks are considered to be a crucial component of classroom education (Hogben & Waterman, 1997, 99), researchers are increasingly questioning the textual content of textbooks (for example, Power & Baqee, 2010; Chick, 2006; Gordy, Hogan, & Pritchard, 2004; Macaulay & Brice, 1997; Peterson & Kroner, 1992), and the process of delivering course materials in the classroom (for example, Power & Baqee 2010; Beaman, Wheldall, & Kemp, 2006; Chin, 2006; Driver, Asoko, Leach, & Scott, 1994; King, 1994; Younger, Warrington, & Williams, 1999). These researchers are primarily concerned with the way knowledge is constructed in textbooks and during its delivery in classroom settings. They also focus on the types of knowledge that are included in and excluded from the curriculum, and on the representation of various social groups, ideas and concepts in the curriculum. Education researchers suggest that it is critical to examine the content of a curriculum because curricula are not entirely impartial or value-free in their representation of knowledge (for example, Goodson, 1994, 16). Curriculum content (like any other form of knowledge) is socially constructed and as a result, it advertently or inadvertently expresses certain views and knowledge, and excludes and marginalizes others, reflecting power and other dynamics in the wider society (Smith, 1990).

The present research study examines the content of the Workplace Safety 3220 course curriculum, and explores the construction of OHS knowledge within it. It examines how knowledge is socially constructed in the textual content of the course and during its delivery in the classroom, and how that knowledge reflects and may contribute to different discourses and biases about youth and OHS (particularly about Newfoundland youth). For example, the study examines how the curriculum reflects knowledge about occupations at risk, the nature of risk, who is at risk, and ways to reduce risk. This investigation into OHS knowledge is informed by

the idea that the creation and use of knowledge is socially situated, implying that knowledge inevitably reflects the current social order. It is also informed by the notion that there are multiple and alternative understandings of OHS and that some ideas are more prevalent than others. These notions dictate which ideas and concepts are considered to be valid OHS knowledge and which are ignored, silenced or undermined. This preference for certain knowledge over others reflects the current cultural, social and political struggles (Power & Baqee, 2010)[4].

The present study recognizes that the cultural and social orders represented in the curriculum are mediated by age, gender, social class and geographic locations (i.e., rural and urban life). To illustrate, feminist philosopher of science, Sandra Harding, argues that if we believe that a Ku Klux Klan member's behaviours and beliefs are informed by class, race and gender relations, then we should also believe that those same social relations (among others) shape our "empirically supported" knowledge that is "confirmed by evidence" (Harding, 1991, 12). For these very reasons, the present study concentrates on how the curriculum reflects ideas about OHS specifically in relation to the discourses on youth, gender, social class and geographic location in Newfoundland and Labrador society. This process brings a socio-economic and political focus to the study.

[4] Based on the findings from my MA research, I co-authored an article in association with Dr. Nicole Power which was published in the 2010 edition of the journal *Policy and Practice in Health and Safety,* entitled Constructing a 'culture of safety': an examination of the assumptions embedded in occupational safety and health curriculum delivered to high school students and fish harvesters in Newfoundland and Labrador, Canada.

1.3 Significance of the study

Much like the rest of Canada, many people are employed during their youth in Newfoundland and Labrador. Employment statistics on people between the ages of 15 and 24 in Newfoundland and Labrador suggest that in 2006 a total of 25,320 were employed (38.7%), and 34,585 (52%) participated in the labour force (Statistics Canada, 2008). The introduction of the OHS course at the high school level is an indication of the government's interest in empowering young workers with knowledge on OHS management, and protecting them from occupational hazards and injuries. While the importance of an OHS education program as a government strategy to address young people's occupational injuries is understandable, it is critical to examine the content of the curriculum used to convey the OHS knowledge (Porter, 2002). It is imperative to understand what is being constructed as valid OHS knowledge and how such knowledge relates to the young workers and the social order as a whole.

The existing research on OHS education and training for youth primarily focuses on the overall evaluation of the programs. These studies concentrate on evaluating students' ability to recall OHS knowledge, and on evaluating the *before-and-after* effects of introducing education or training programs on youth's workplace injuries (for example, Burke et al., 2006; Lamb, Joshi, Carter, Cowburn, & Matthews, 2006; Lerman, Feldman, Shnaps, Kushnir, & Ribak, 1998; Linker, Miller, Freeman, & Burbacher, 2005; O'Connor, Loomis, Runyan, dal Santo, & Schulman,, 2005). Very few studies critically examine the types of knowledge that are included (or excluded) in the OHS curriculum, or the construction or presentation of this knowledge in the educational materials (for example, see Shearn, 2006; and Kosny, 2005). In most research studies, the content of the curriculum is not examined or questioned at all; rather it is mostly accepted as a neutral factor to be taken for granted (Englund, 1997). The significance of the

present study lies in the fact that rather than evaluating the effectiveness of OHS curriculum as an intervention strategy to reduce workplace-related accidents and injuries, it draws attention to what counts as OHS knowledge and how this comes to be. The study questions how the OHS knowledge is constructed, and observes the types of knowledge that are emphasized in the curriculum and makes note of others that are marginalized. By doing so, the research reveals the relationship between the curriculum and the competing discourses on youth and their OHS. Ultimately, the study contributes to the understanding of the social organization of knowledge.

Sociologists and education researchers have traditionally examined the social construction of knowledge in various subject areas including Psychology, Language, History and Science (for example, see Chick, 2006; Chin, 2006; Hogben & Waterman, 1997; Macaulay & Brice, 1997). However, they rarely deviate from this list of disciplines. By focusing on an OHS curriculum, the present study contributes to our growing understanding of the social construction of knowledge as a whole. Like many other studies on the social construction of knowledge, the present study demonstrates a particular focus on how the OHS knowledge is constructed in relation to ideas about youth, gender, social class, and geographic location. This has the capacity to enhance our understanding of how these factors interact with any body of knowledge. Through field research, this study also contributes to understandings of how classroom interactions between instructors and students contribute to the construction of knowledge. While there is a growing interest in the process of knowledge construction through classroom interactions, the existing literature is not informative about how such interactions contribute to the construction of a type of knowledge that is intended to directly relate to the students' health and employment experiences. This study contributes to the literature by introducing a specific focus on OHS knowledge. Overall, a review of the existing literature reveals that the subject of

knowledge construction in OHS curriculum, particularly ones targeted at youth, remains little explored and the present research will contribute to the literature.

1.4 Overview of the study

Using a multi-methods approach, including discourse analysis, participant observation and interviews, this study explores the process of knowledge construction within the Workplace Safety 3220 curriculum in the Canadian province of Newfoundland and Labrador, revealing a number of underlying social assumptions, biases, and omissions embedded in the curriculum and its delivery. I use a social constructivist perspective to explain these findings, discuss the social implications of these findings, and make a number of recommendations for a curriculum revision.

The Workplace Safety 3220 curriculum is the first high-school based curriculum introduced to the youth of Newfoundland in an effort to reduce occupational injuries and accidents among young workers. It conveys critical knowledge on identifying and defining various types of occupational hazards in the workplace, prevention mechanisms, accident investigation and reporting and overall OHS management. The curriculum uses a technical and scientific approach to convey the OHS knowledge, which gives the impression that what constitutes workers' OHS can be easily identified, quantified, measured and controlled. This technical and scientific language leaves little room for alternative understandings or management of OHS or for examining how individual workers experience OHS under different circumstances. The curriculum is also reflective of the dominant discourses of 'at risk' youth and

suggests that youth's risk-taking behaviour and their tendency to see themselves as invincible are the primary contributors to the high levels of occupational injury and fatality among them (Benthin, Slovic, & Severson, 1993, 153 and Centers for Disease Control and Prevention, 1997), and that OHS education targeted at youth is one of the primary answers to the problem (Lerman et al, 1998; and Linker, et al., 2005). Furthermore, the curriculum is written based on the ideologies of individual responsibility toward personal health and safety and a culture of injury prevention at work. This OHS management culture advocates that workers need to be responsible for their own OHS and prevent injuries and accidents at work (Walters, 1988). In combination, these ideas send a strong message to youth that their attitudes and behaviours are responsible for their high occupational accidents and injuries and that fort the most part, they are responsible for their own safety (and injuries). The Workplace Safety 3220 curriculum fails to incorporate findings from the considerable amount of research that suggests there are social, economic, organizational, and work environment-related factors that also shape youth's OHS experiences. In general, the curriculum under-represents factors which contribute to youth occupational injuries but are beyond their personal control and fall outside of their training and mindset. For example, the curriculum mostly remains silent about the power relations at work between young workers and their supervisors, about fears of job loss, and about how the lack of employment opportunities for youth in a community can often affect young workers' actions and exposures as well as their failure to exercise their right to refuse unsafe work (for example see, Kosny, 2005).

The Workplace Safety 3220 curriculum is also biased toward OHS issues in adult, male, blue-collar occupations and the associated OHS knowledge. The curriculum contains information reflective of many OHS research programs, official statistics and government

agencies that place a disproportionately higher emphasis on occupational injuries and fatalities among blue-collar workers such as electricians, construction workers, and manufacturing workers. The discourses associated with these voices of authority primarily focus on compensable incidents that are clearly job related. Research has shown that male blue-collar workers are most likely to experience such injuries (Messing, 1998). While male blue-collar workers admittedly have higher than average rates of occupational injuries and fatalities, the curriculum's complete focus on the OHS issues of these workers means it under-represents and often omits knowledge relevant to female workers and workers concentrated in rural, non-industrialized and white- and pink-collar occupations. More importantly, the curriculum largely excludes the OHS experience of young workers who are not always working in blue-collar jobs and are mostly restricted to part-time precarious jobs due to their lack of experience and academic qualifications (Vosko, Zukewich, & Cranford, 2003).

Using Smith's (1990) theoretical framework on the social construction of objectified knowledge and the Foucauldian new sociology of the curriculum, I argue that the research findings presented in this thesis are typical examples of the types of power struggles that continue to exist within the social structures of work, education and in society in general. While the introduction of an OHS curriculum within the high school education program responds to the need to educate youth about OHS issues, the Workplace Safety 3220 curriculum fails to represent the diversity of the workforce and overlooks OHS knowledge and issues pertinent to the non-dominant social groups. The curriculum's primary focus on adult blue-collar workers and their OHS issues and the under-representation of young workers, women workers, white-collar workers and other rural non-industrialized workers in it reflects the recent emphasis the local government has been placing on promoting vocational trades (for example, see Stacey,

2002). It reflects government's reliance on official data produced by the bureaucracy which reinforce the discourses claiming that male, blue-collar workers have the riskiest jobs and are therefore more worthy of attention and assistance from workers' compensation and government inspectors. The assumption in the curriculum that youth are primarily responsible for their own occupational injuries, and the overwhelming emphasis on individual responsibility in OHS management, reflects the tendency to at times push the burden of ensuring workplace health and safety on to these often vulnerable individual workers and away from government, workers' compensation boards, and employers. As Kosny (2005) argues, "Messages that workers should 'know their rights,' 'protect themselves,' and 'avoid risk' are commonplace in occupational health discourses and leave in their wake the impression that state and employer responsibility for worker health is secondary and unimportant. " The findings from the present study also show how women's OHS concerns continue to be poorly captured in dominant discourses. The under-representation of women's OHS issues and experiences in the Workplace Safety 3220 curriculum echoes the broader patterns of gender inequality and power differentials within the education system and in the workplace.

As Smith (1990) recommends, the first step toward subverting social inequalities and the patriarchal relations of ruling is to deconstruct objectified knowledge and the socio-economic context within which such knowledge is organized. The present study does just that within the Workplace Safety 3220 curriculum. It is expected that future research on this subject can raise greater awareness and create a force for fundamental changes in similar curriculum. In doing so, these studies can contribute to the alternative discourses that not only challenge the dominant discourses and beliefs on youth and OHS but also contribute to the subversion of the power struggles that shape young workers' OHS experiences.

The thesis is presented in 8 chapters, including the present introductory chapter. In chapter two I present a review of the literature on youth's unique occupational health and safety experiences and challenges, and on OHS education curriculum targeted at youth. Chapter three consists of an examination of the theoretical work on the social construction of knowledge, particularly knowledge presented in school curriculum. In this chapter I develop a theoretical perspective that is used in the study for theoretical and methodological framework. In chapter four I discuss the different types of research methods I used to collect data for the study. These methods include discourse analysis, content analysis, personal interviews and participant observations. The next three chapters present the key findings of this study. In particular, in chapter five I discuss the Workplace Safety 3220 curriculum's focus on objectified knowledge and its implications. Next in chapter six I illustrate how the curriculum identifies the young worker as the problem; i.e. the young workers do not have enough OHS knowledge, and they feel that they are invincible at work. I further discuss the curriculum's primary focus on individual responsibility and a culture of prevention for OHS management. In chapter seven I present the assumptions, biases and omissions that are embedded within the Workplace Safety 3220 curriculum. Finally, in chapter eight I make my concluding remarks and discuss the implications for the study's findings. I also discuss the need for future research on this particular subject.

Chapter 2 Literature Review

Research on workplace health and safety-related education programs suggests that the curricula used for these programs tend to be informed by discourses that individualize worker's OHS (Kosny, 2005). Even though a considerable body of research shows that job-related factors, employer and management-related factors, as well as external socio-economic factors play important roles in shaping workers' health and safety experiences (West et al., 2005; (Mayhew & Quinlan, 2002; Breslin & Smith, 2005), many curricula continue to maintain a primary focus on the individual worker's OHS knowledge and skills. Workers' compensation claims, injury and hospitalization records and other official records commonly used as markers of OHS incidents tend to trace occupational accidents and illnesses to the individual workers, who are often deemed responsible for these incidents. Many researchers use these official statistics to examine OHS issues among youth as well as adults (for example, see Aggazotti et al., 2006; and Breslin, Koehoorn, Smith & Manno, 2003). While discourses in these curricula tend to focus on internal responsibility and to emphasize individual approaches to the management of OHS, which can effectively teach workers about their individual rights and responsibilities, they do not take into account the socio-economic environment within which work and OHS are experienced and practiced. For example, the promotion of individual responsibility can teach the worker about unsafe work conditions they should avoid; it does not, however, bring to light issues such as conflict with supervisors, fear of job loss or financial needs which can silence workers' concerns about unsafe work conditions. The present study therefore begins by exploring research on how young workers experience OHS in their workplaces and then examines the ways in which these

experiences are represented or silenced within the Newfoundland and Labrador high school Workplace Safety 3220 curriculum. The first section of this literature review examines the pattern of youth employment in North America, and the unique OHS challenges young workers experience. It also describes the risk factors for youth in terms of occupational injuries both at the individual level and at the societal level.

The present research study is focused on the construction of OHS knowledge within the Workplace Safety 3220 curriculum. Many OHS education programs are said to be written in a language that promotes objective knowledge which focuses on the 'dos and don'ts' of preventing occupational incidences, and have little room for knowledge on how workers experience OHS on a daily basis and how these experiences mediate risks, and their OHS rights and responsibilities (Kosny, 2005 and Power & Baqee, 2010). In order to understand the process of knowledge construction within the Workplace Safety 3220 curriculum, the second section of the literature review examines research on how knowledge is constructed in various school curricula and how they represent specific kinds of knowledge, ideas and social groups. It specifically focuses on the knowledge construction process within the textual materials representing the official curriculum, and within the classroom interactions representing the delivered curriculum.

2.1 Youth's unique OHS considerations and challenges[5]

Research suggests that young people's work and OHS experiences are not always comparable to their adult counterparts and therefore, knowledge on these experiences are not always

[5] Heading taken from West et al.'s (2005) article titled, *The youth work force: unique occupational health considerations and challenges.*

transferable from one age group to the other (Breslin & Smith, 2005; Mitchell, Franklin, Driscoll, & Fragar, 2002; Zakocs, Runyan, Schulman, Dunn, & Evensen, 1998). Compared to adult workers, young workers tend to have lower levels of education and training, and less accurate perceptions of risks and hazards. They are also more likely to be employed in precarious jobs in smaller organizations with fewer OHS standards, and they tend to experience higher rates of injuries and accidents (Zakocs, et al., 1998; Breslin & Smith, 2005; Mitchell, et al., 2002; Breslin, et al., 2007; and Messing, 1998). Broadly speaking, there are two main approaches in the literature explaining youth's distinctive employment experience. The first takes a developmental approach and assumes that chronological age can tell us something about the abilities, capabilities and experiences of workers. This approach is often used in quantitative studies (Tyyskä, 2009). Researchers commonly use the following age ranges to define youth: people between the ages of 14 and 18, 15 and 24, 16 and 24 (Australian Bureau of Statistics, 2005; Betcherman & Leckie, 1997; Lucas & Ralston, 1997; Zierold & Anderson, 2006). The second approach takes a social constructivist perspective and assumes that a society's definition of youth reflects wider economic and social changes. For example, Tyyskä (2009) suggests that the current "pressure to stretch 'youth' in the industrialized West, based on their total or partial dependence on parents and/or the state, reflects social processes that presently include lengthened education and part-time or temporary employment" (5). [6] Regardless of their approach to defining youth, researchers tend to agree on the distinctness of issues experienced by youth in OHS as well as other aspects of life.

[6] In keeping with the Government of Canada (2000) definition, in the present study youth are defined as people between the ages of 15 and 24. This particular definition is chosen mainly for the ease of data collection since most of the provincial and federal statistics on youth employment and education use this age range.

In North America, Australia and most of Europe, youth employment is a very common practice (Australian Bureau of Statistics, 2005; Betcherman & Leckie, 1997; European Agency for Safety and Health at Work, 2004; Zierold & Anderson, 2006). In most of these regions, approximately 70 to 80 percent of all teenagers have at some point worked for pay before leaving high school (West et al., 2005, 297; Zierold & Anderson, 2006, 525). In fact, most young workers simultaneously pursue education and work (Betcherman & Leckie, 1997, 9; Zierold & Anderson, 2006, 525). They work in a variety of jobs both in the formal and the informal labour markets. Common jobs for young workers in the formal economy include those in sales, service and cashier jobs in the food and beverage industry, the retail trade industry, and in clerical and administrative jobs in various industrial sectors (Breslin & Smith, 2005, 51). In North America, youth are also highly represented in different types of jobs in the informal economy (i.e., jobs that do not generate tax revenues) (Apel, et al., 2006; Shanahan, Mortimer, & Krüger, 2002). Babysitting, yard work, and farming are some of the most common jobs done by youth in the informal economy (Zierold, 2004). Most jobs held by youth in Newfoundland and Labrador and elsewhere, are precarious, consisting of shift work, part-time work, temporary work, seasonal work, and other forms of non-standard work (Vosko, Zukewich, & Cranford, 2003). These types of jobs are often characterized by irregular work hours and work arrangements, poor pay and benefits, job insecurity and high levels of health and safety risks (Vosko et al., 2003; Loughlin et al., 1999, 19).

Young Canadians are also frequently employed in the goods-producing sector. About 18 percent of employed youth in Canada were working in the goods-producing industries in 2003. Among them, a large majority worked in the manufacturing sector, followed by the construction, agriculture, and resource extraction industries (Employment Program Policy and Design Branch,

2005). While male youth in Canada were more likely to work in the manual labour sector (construction, stock handling, etc.) and the farming sector, their female counterparts were more likely to be employed in the sales and services, and administrative sectors (Apel, Paternoster, Bushway, & Brame, 2006). In Newfoundland and Labrador young workers were primarily concentrated in the sales and services sector (46.54%) and the construction sector (12.27%). Table 2 demonstrates that similar to the national trend, the employment pattern varies between male and female youth in Newfoundland and Labrador. According to 2005 statistics young women mostly worked as retail salespersons, clerks, cashiers, food and beverage workers, childcare and home support workers, clerical workers and other service related workers. In contrast, the young men tended to be employed in a wider range of industrial sectors. They mostly worked as retail salesperson, clerk, cashier, food and beverage worker, cleaner, clerical worker, fisher and other resource extraction worker, equipment operator, labourer, and other construction and service related worker (Community Accounts, 2006).

Table 2: The Young Workers of NL Based on Gender and Occupation (2005). *Source: Community Accounts (2006).*

All Occupations	**Male**		**Female**		**Total**	
	Total	**Percentage**	**Total**	**Percentage**	**Total**	**Percentage**
All Occupations	**21,030**		**20,405**		**41,435**	
Health	75	0.36%	310	1.52%	380	0.92%
Nurses	10	0.05%	125	0.61%	140	0.34%
Other	70	0.33%	180	0.88%	240	0.58%
Education	**325**	**1.55%**	**780**	**3.82%**	**1,110**	**2.68%**
School teachers	10	0.05%	185	0.91%	205	0.49%
Other	315	1.50%	595	2.92%	905	2.18%
Primary	**2,340**	**11.13%**	**525**	**2.57%**	**2,860**	**6.90%**
Fishers	765	3.64%	135	0.66%	905	2.18%
Loggers	135	0.64%	10	0.05%	140	0.34%
Other	1,425	6.78%	385	1.89%	1,810	4.37%

Sales and service	**7,330**	**34.85%**	**11,945**	**58.54%**	**19,285**	**46.54%**
Retail, clerks & cashiers	1,830	8.70%	5,075	24.87%	6,905	16.66%
Food & beverage worker	1,630	7.75%	3,080	15.09%	4,710	11.37%
Protective services worker	555	2.64%	150	0.74%	705	1.70%
Childcare & home support worker	110	0.52%	1,390	6.81%	1,500	3.62%
Cleaners	815	3.88%	525	2.57%	1,340	3.23%
Other	2,390	11.36%	1,735	8.50%	4,125	9.96%
Management	**305**	**1.45%**	**320**	**1.57%**	**620**	**1.50%**
Office & related	1,740	8.27%	3,015	14.78%	4,755	11.48%
Secretaries & admin. support worker	95	0.45%	430	2.11%	520	1.25%
Clerical occupations	1,545	7.35%	2,440	11.96%	3,985	9.62%
Other	100	0.48%	145	0.71%	240	0.58%
Construction and related	**4,685**	**22.28%**	**405**	**1.98%**	**5,085**	**12.27%**
Construction worker	700	3.33%	20	0.10%	720	1.74%
Mechanics	485	2.31%	30	0.15%	510	1.23%
Equipment operators	680	3.23%	100	0.49%	785	1.89%
Labourers	2,040	9.70%	175	0.86%	2,220	5.36%
Other	775	3.69%	75	0.37%	850	2.05%
Processing & manufacturing	**1,745**	**8.30%**	**560**	**2.74%**	**2,305**	**5.56%**
Fish processing workers	835	3.97%	335	1.64%	1,175	2.84%
Other	915	4.35%	225	1.10%	1,135	2.74%

Even though most jurisdictions have pieces of their legislation that apply particularly to youth and their employment safety issues (Zakocs et al., 1998, 342-343), some researchers suggest that "[t]eenagers are approximately twice as likely as adults to suffer injuries resulting in workers' compensation claims and emergency room visits" (Zierold & Anderson, 2006, 525). Canadian youth injury records show that they commonly experience "burns, scalds and chemical burns, as well cuts, punctures, bites, scrapes, bruises, and blisters" (Breslin & Smith, 2005, 52). In addition, statistics from the United States suggests that about 70 youth die each year on the job. Most of these young workers experience occupational fatality during their employment in

the agricultural and the retail trade sectors (West, Castro, & Fitzgerald, 2005, 299). In Newfoundland and Labrador in particular, compensation claims data for 16 to 24 year olds suggest that six young men died on the job between 2000 and 2006. During that same period, young men and women working in different industrial sectors most commonly experienced sprains, strains and tears, cuts and lacerations, muscle injuries, burns and bruises. Youth working in the retail trade sector and the service sector made a large majority of the compensation claims[7]. In addition, young men working in fish processing also experienced bone fractures. Overall, the provincial compensation claims data reflect a gendered pattern where over 70 percent of all successful claims were made by young men (Codner, 2008a). This gendered pattern is a consequence of the types of injuries that are typically approved for compensation claims (Codner, 2008a).

With regards to the rural urban differences relating to youth employment and OHS, it is frequently suggested that, compared to urban areas, the rural environment often restricts a young person's opportunities and access to amenities. Many researchers have found that rural youth have distinctive OHS issues. These issues relate to the types of industries prevalent in rural environments (resource-dependent, farming etc.), as well as to the structure of rural industries, their frequent embeddedness in single-industry communities, limited access to OHS training and expertise and limited access to health professionals trained in diagnosing and managing work-related injuries and illnesses (see Breslin, Smith, Mustard, & Zhao, 2006; Laurent, 2002; Lee et al., 2004; Parker et al., 2002). Alasia and Magnusson (2005) suggest that the long term employment patterns in Canada demonstrate a concentration of low-skill jobs in the rural areas and high-skill jobs in the urban areas (2). Australian statistics indicate that rural people have an

[7] WHSCC does not maintain any records for unsuccessful compensation claims. All statistics and patterns presented here are based on successful claims.

increased exposure to risks, but a decreased access to emergency services and other health care facilities (Loos, Oldenburg, & O'Hara, 2001, 222). Both of these factors can adversely affect young workers in rural communities. However, not all rural environments offer the same types of work opportunities or OHS challenges, and the work experience of specific rural sub-populations is distinctive within their environments.

Increasingly, studies suggest that employment during high school years can not only affect youth's physical health, but can also have significant impact on young people's mental health. On the one hand, working youth demonstrate improvements in self-confidence, punctuality, academic achievement, financial management, sense of responsibility and independence, and social skills in dealing with people (Dunn, Runyan, Cohen & Schulman, 1998). On the other hand, research also suggests that young workers can display increased risk for problem behaviours in school, smoking, alcohol abuse, stress and depression (Mortimer et al., 1996; Mortimer et al., 1992; Mortimer et al., 2002; Shanahan et al., 1991; Wegman & Davis, 1999; Greenberger & Steinberg, 1986).

What factors contribute to the alarming rate of occupational health incidents among youth? Research suggests that there are many factors, both at the individual level and at the societal level, that contribute to work-related risks to youth's physical and mental health. The next two sections describe these factors in detail.

2.1.a Risk factors at the individual level contributing to youth injury

Adolescent epidemiology, psychology, and physiology are some of the prominent disciplines that by nature focus on individuals, and their abilities and limitations. In terms of

OHS discourses, these disciplines help to locate and understand youth's workplace health risks at the individual level. The research from these disciplinary angles suggests that given their cognitive abilities and experience, youth are more likely to experience accidents and injuries than are adults (Centers for Disease Control and Prevention, 1997). It is further argued that as young people age, the likelihood for these accidents and injuries decrease as they gain experience over time. This focus on understanding and identifying the individual worker's abilities and limitations helps support the notion that proper training and education for young workers is important to reducing their occupational risks and injuries (Linker et al., 2005).

Physiological studies have found that at their age, young people experience rapid growth of organ and musculoskeletal systems, which may increase their risks of being harmed by exposure to hazardous substances or to develop cumulative trauma disorders (National Institute for Occupational Safety and Health, 2003; Centers for Disease Control and Prevention, 1997). Moreover, studies examining the work setting have found that often there is a poor fit between equipment designed for adult-sized bodies and the bodies of growing youth (Yadav & Sengupta, 2009 and Centers for Disease Control and Prevention, 1997). For example, while operating tractors on farms, youth often find it difficult to reach the brake with their feet, or are unable to use adult-sized personal protective equipments properly. Literature suggests that it is not just young bodies that grow and change. A wealth of literature on risk perception argues that youth is a phase during which people go through significant psychological transition, which often "requires more time to complete, and typically lags behind physical maturation" (Centers for Disease Control and Prevention, 1997). Youth are described to have a poor sense of judgment and risk assessment, incomplete self-image, and a desire to conform (or conversely, rebel). They are also known to seek sensation, independence and maturity, and are vulnerable to peer pressure

and the pressure to excel. It is further suggested that young people may feel a sense of invulnerability or immunity to injury due to their poor judgment and their desire toward sensation seeking. During this time young workers may be assigned work that would not necessarily fit their level of psychological maturity and level of experience (Centers for Disease Control and Prevention, 1997). Research suggests that when faced with a choice to partake in risky activities, young people tend to perceive greater associated benefits as compared to the risks involved (Benthin, Slovic, & Severson, 1993, 153). In other words, youth are often at greater health risk due to the ways in which they perceive health, safety and risk.

Greenberger & Steinberg's (1986) work focuses specifically on youth's behaviour at work to note that adolescents frequently demonstrate characteristics such as great energy, enthusiasm, and desire to take on challenging situations. These characteristics can make them less inclined to ask questions about their jobs, and more inclined to do tasks that are beyond their physical abilities, which often leads to injuries. It is also suggested that they are often unaware of the OHS-related rights and responsibilities of the employer and the employee. In these situations, youth are reluctant to seek improvements in pay or working conditions (West et al., 2005, 298). Some studies indicate that youth also have difficulty recognizing occupational hazards and risks (Lavack, 2008). Based on evaluative tests given to pre-teen children, Lamb and his co-authors (2006) conclude that depending on the complexity of the information, young people also have difficulty retaining health and safety skills and knowledge. Moreover, young workers are often said to lack the work experience and emotional maturity necessary to do their jobs safely (National Institute for Occupational Safety and Health, 2003, 1-2). The following section presents a review of the literature that goes beyond the physiological and psychological attributes

of youth and focuses on risk factors associated with the jobs youth commonly perform, and their work environments.

2.1.b Social factors contributing to youth injury

Sociological literature on occupational injuries and risks tends to locate youth's workplace health risks at the societal and organizational level and to attend relatively little to their physical or psychological attributes. The sociological approach to studying youth OHS calls for an understanding of why young workers experience high rates of occupational injuries, fatalities and conditions and demonstrates the need for a multi-sector intervention that focuses on OHS education and training for workers, as well as employers, and on the participation of government bodies and other social institutions in the enforcement of legislation protecting workplace health and safety and to bring about necessary policy changes (Kosny, 2005). These studies have shown that young people's job-related factors and work environment-related factors play critical roles in their occupational risks and injuries. For example, research suggests that youth working in precarious jobs where they have to handle cash, work alone or work in the late evenings and early mornings are at increased risk of homicide (West et al., 2005, 299). Compared to their adult counterparts, young workers often experience a higher rate of occupational violence in the form of verbal abuse, threats, and assaults from customers and supervisors (Mayhew & Quinlan, 2002, 261). Studies have shown that youth employment is concentrated in certain industries characterized by higher numbers of occupational hazards, such as in the trade, manufacturing, construction, and other goods-producing industries (Breslin & Smith, 2005). Youth are also significantly over-represented among employees in small-sized firms, which often have lower

standards of workplace health and safety than larger firms as a result of limited resources and OHS knowledge (Breslin & Smith, 2005, 54-55). In fact, based on three surveys of representative samples of Canadian workplaces, Smith and Mustard (2004) have found that just one in five new workers of any age had received any safety training from their employers (also see Centers for Disease Control and Prevention, 1997).

The situation for young workers can be exacerbated by supervisor-pressure to perform faster, or when their strength and masculinity are questioned by their co-workers in relation to using protective equipment or carrying heavy loads, leading them to ignore the advocated safety behaviours (Breslin et al., 2007, 791 and Lavack, 2008, 4). A recent study by Breslin et al. (2007) on Canadian youth and their perceptions of occupational health risks provides an important insight to how work environment and workplace relations contribute to the vulnerability of young workers. Through focus group sessions with young workers, Breslin and his co-authors (2007) found that young workers often viewed their occupational injuries as "part of the job" due to their frequent occurrence and low severity. They also found that young workers did not necessarily lack knowledge about health and safety and their rights and responsibilities; rather, they perceived a lack of control to improve their working conditions. This sense of lack of control arose from the fact that often the young female workers' complaints were disregarded by superiors, and the young men and young women working in male-dominated jobs stifled their complaints in order to fit in with their masculine, adult counterparts (791). The authors argue that these behaviours are not necessarily unique to young workers; qualitative studies on adult workers also indicate that to some degree they accept occupational risks and injuries as "part of the job." They conclude that these behaviours of stifling and disregarding health and safety related complaints reflect the "imbalanced power relations within

many workplaces" between workers and their supervisors (Kosny, 2005, 75 in Breslin et al, 2007, 783).

Breslin and Smith (2006) have found that job tenure (i.e. time on the job) is another risk factor for injury and fatality among workers of all ages. Job tenure contributes to the shaping of every worker's occupational risks. To support this claim, the authors have noted similar rates of decline for both young and adult workers in compensation claims with time on the job. That is, any worker's occupational risks tend to decline over time with experience. These research findings indicate that factors outside of youths' physiological and psychological attributes have to be considered when examining youth's risk factors for occupational injuries. Researchers often argue that youths' risk-taking behaviour is not the main factor that increases their occupational risks. Rather, it is the types of jobs that young workers do, the types of work environments and work settings in which they work and their often shorter job tenure that largely shape their occupational health risks (Breslin & Smith, 2005).

The literature on youth's occupational risks and injuries suggests that there are numerous individual-based and societal factors that interact and contribute to youth's overall workplace health and safety. These factors do not operate in isolation; in order to understand the OHS experiences of young workers, we need to acknowledge and appreciate how the individual-based factors and the societal factors are interconnected.

2.2 School curriculum for youth

The present study focuses on the construction of OHS knowledge within the Workplace Safety 3220 curriculum. Therefore, in addition to understanding the factors that influence OHS

experiences and outcomes among young workers, it is also critical for this study to examine the literature on sociology of education to examine the process of knowledge construction within the curriculum. In particular, it is important to explore how scholars have examined various school curricula to reveal the ways in which they reinforce or silence specific kinds of knowledge, ideas and social groups. The existing literature on the content of OHS education and training curricula is not extensive. This is a relatively new area of investigation that requires scholarly attention. In this section I review the literature on the construction of knowledge in school curriculum in various subject areas, and then describe the nature of the few research work that have been conducted so far on OHS curriculum.

With the growth of the education system, the use of textbooks – particularly in Western society, has increased to such an extent that most school-going children read several textbooks in each grade (Streitmatter, 1994, 74). Data from the 1990s suggest that in at least 90 percent of their classroom learning time, students use some sort of instructional material, textbooks being one of the most common. Research suggests that both teachers and parents are confident about the contribution of textbooks to the students' success (Hogben & Waterman, 1997, 99; Woodward & Elliot, 1990, 148). Despite the value attributed to and the wide usage of textbooks in schools, questions remain about their role in the education system (Chick, 2006; Gordy et al., 2004; Macaulay & Brice, 1997; Peterson & Kroner, 1992). Researchers are also examining classroom interactions and curriculum delivery methods to understand how the social processes of knowledge construction and knowledge transfer occur (for example, Beaman et al., 2006; Chin, 2006; Driver et al., 1994; King, 1994; Younger et al., 1999). The following two sections review the findings from a number of important studies that have examined the process of

knowledge construction in the official curriculum presented in textbooks, and in the delivered curriculum conveyed through classroom interactions.

2.2.a Knowledge construction in textual materials

Educational sociologist Andy Hargreaves suggests that the study of the 'curriculum' has become one of the most important fields within educational research since the middle of the twentieth century. However, prior to this time the political nature of the curriculum content, in terms of its construction and presentation was, for the most part overlooked (in Goodson, 1994, 2). The content of the curriculum was primarily treated as a neutral factor woven into an otherwise complex structure of education (Goodson, 1994, 16; Englund, 1997). However, this changed significantly later in the century when research, particularly feminist research on education and sociology, began examining the content of textbooks, and found the prevalence of certain types of knowledge, and the marginalization of others. Some researchers argue that textbooks often reflect a language and content that favour ideas and knowledge represented in dominant discourses and marginalize or silence alternative discourses. Research has shown that racial minorities, women, and other minorities are often marginalized or omitted altogether from many curricula. Moreover, certain types of knowledge, for example non-scientific alternative knowledge are often marginalized and even trivialized in formal curriculum. This literature is reviewed below.

In a content analysis study, Hogben and Waterman (1997) demonstrate that the 28 U.S. psychology textbooks they analysed reflect a language that silences certain facts and ideas while reinforcing others. They revealed that racial minorities were significantly under-represented in

these books and, when they were mentioned, 61.7% of the time the books focused on Black people (which means other races received even less coverage than Blacks). Interestingly, the authors note that in these books, a substantial proportion of the coverage devoted to Blacks actually focuses on the controversial research findings of Arthur Jensen, who argued that Black people are genetically and environmentally disadvantaged, which causes them to have a lower IQ. While the textbooks suggest that they favour environmental causes for IQ differences, they remain silent about the remainder of Jensen's findings, which demonstrate that Asian Americans normally score higher in IQ tests as compared to White Americans (99). While Hogben and Waterman take a psychological perspective to suggest that such 'mentions' and 'omissions' can discourage psychology students from racial minority groups to pursue further studies in psychology, critical theorists would likely view it as a reflection of racial oppression.

Streitmatter (1994) suggests that traditionally, the English language often reflects male dominance, and generally speaking, "subsume[s] female existence" (94). She suggests that this pattern is clearly evident in English Literature and History textbooks, which are primarily written by male authors and rarely have women as main characters, or mention significant women or women's movements. There are also strong signs of gender stereotyping in terms of the occupations the characters hold, and their attitudes and behaviours, particularly in vocational educational materials. Hamilton et al. (2006) note similar gender patterns in a more recent study based on the illustrations in 200 top-selling children's books in the United States. Among other patterns, they note a significant prevalence of male main characters and the gender stereotyping of occupations. They observe that a comparison of their sample of books from 2001 with books from the 1980s and 1990s did not demonstrate any significant reduction in sexism. In order to address these issues of sexism, which have been raised by women's rights groups, many

publishers simply add information on women at the end of a section or chapter, rather than re-writing and reorganizing the text. This fragmentation or isolation of women's topics can signal to students that those are less important issues (Streitmatter, 1994, 76-78).

This historical pattern of under-representation of women is a theme that is also noted by Peterson and Kroner (1992) in their content analysis of introductory and developmental psychology textbooks. Despite the 1975 recommendations of the American Psychological Association (APA) on language use, and some associated improvements, the study found that gender stereotyping and gender biases continue to exist in the textbooks. Although there is a high percentage of women psychologists (56% psychology Ph.D holders and 78% of developmental psychology Ph.D holders are women) in the US, the text gives the impression that the practice of psychology is a male domain, while women fit within this domain as passive victims or patients of dysfunction and abnormality (Peterson & Kroner, 1992, 31). Hogben and Waterman (1997) suggest that although more recent psychology textbooks have made significant efforts toward incorporating diversity-related content, they still remain gender biased.

In a more recent study, Ninnes (2001) examined the representation of scientific and non-scientific knowledge in a number of junior high school textbooks in Australia to reveal that the authors of these books often use various linguistic techniques to establish and maintain the superiority and validity of scientific knowledge, and concurrently debunk or trivialize non-scientific knowledge. Some techniques that Ninnes found in the textbooks include, "messages about the nature of knowledge and the prescription of possible interpretations, the use of universalistic and objective language and the tendency to avoid conflict and complexity, and representation of the ways of knowing of minority groups as archaic, inadequate or superseded

by scientific knowledge" (91). This demonstrates how knowledge from dominant discourses is reflected in school textbooks.

While the process of knowledge construction in textbooks has been examined quite extensively in many subject areas including Science, Psychology, History, Anatomy and Language (for example, Giacomini, RozÇe-Koker, & Pepitone-Arreola-Rockwell, 1986; Gordy et al., 2004; Hogben & Waterman, 1997; Macaulay & Brice, 1997; Sleeter et al., 1991), a review of the literature produced only a few scholarly works that examine the construction and presentation of knowledge in OHS curricula in particular. For example, in an examination of youth-targeted OHS knowledge presented in two popular pamphlets authored by the Ontario Workplace Safety and Insurance Board, Kosny (2005) explores the process of knowledge construction using critical discourse analysis as her methodology. In another study, Power and Baqee takes a similar approach to understand how knowledge is constructed in two safety courses made mandatory for fish harvesters in Newfoundland and Labrador in 1990s (Power and Baqee, 2010). The findings from both of these studies revealed that the construction of OHS knowledge is dominated by an individualization discourse that promotes safety, prevention and OHS responsibility at the level of the individual worker while marginalizing the OHS responsibilities of employers, the government and other authorities.

In addition to school-based OHS curriculum, there has been a growth in social marketing campaigns that aim to raise OHS awareness among young workers in particular (Kosny, 2005 and Lavack, 2008). For example, in a 2008 study conducted by WorkSafe BC, Lavack examined over 250 safety communications materials targeted at youth and found that more than half of these materials apply fear appeals to promote individual responsibility toward OHS (2008, 14). Fear appeals are "persuasive communications which attempt to motivate people to conform with

a set of recommendations by stimulating fear reactions" (Janis, & Feshbach, 1953). Lavack's study suggests that today's OHS social marketing campaigns achieve fear appeal through the use of pictures of healthy young people juxtaposed with their pictures in wheelchairs or crutches or in the morgue after serious accidents (6). These campaigns are used to create OHS awareness among youth and to instill a culture of injury prevention. However, their effectiveness in altering youth behaviour is often questioned as these campaigns often do not develop the campaign materials following the social marketing model that ensures their effectiveness. Nevertheless, these campaigns are used heavily to educate youth (Lavack, 2008).

2.2.b Knowledge construction in the classroom

In addition to examining the construction of knowledge in textbooks, researchers also see importance in observing the knowledge construction/reconstruction process during classroom interactions and delivery of the official curriculum (for example, Chin, 2006; Driver et al., 1994; King, 1994). Researchers often differentiate between the *official* or *planned* curriculum and the *actual* or *received* curriculum to suggest that these two are not necessarily the same due to various factors including the instructors' conscious or unconscious efforts to tailor the curriculum to the students' interests (Kelly, 2004, 6). Neither instructors nor students are passive participants in the classroom learning environment. Chin's (2006) study on the contribution of classroom interaction to knowledge construction reveals the difference between the official curriculum represented in textbooks and the received curriculum in the classroom. She takes a social constructivist perspective in her research on how scientific knowledge is constructed in classrooms among 12 to 13 year old students. She observes that "[w]hen students learn science in

a classroom setting, a primary source of information input comes from teacher talk and teacher–student interactions, as the processes and transactions involved in the construction of meanings are mediated through language" (1315). Moreover, Chin describes the difference between authoritative discourse and dialogic discourse to elaborate the process of socially constructing and reconstructing knowledge through classroom interactions. In authoritative discourse, the teacher mainly conveys the knowledge in the form of factual statements, reviews and instructional questions. In a way, the authoritative discourse reflects the official curriculum. In dialogic discourse the construction of knowledge is more fluid, where the teacher encourages discussions, debates and challenges. Alternating between the two types of discourses to create a "rhythm of the discourse," allows the teachers to go between presenting knowledge, and encouraging the exploration of new knowledge (1317).

This review of the literature reveals that the examination of OHS curriculum is a relatively new area of sociological or indeed any disciplinary study. The existing literature is limited in its understanding of how OHS knowledge is constructed in the official as well as the delivered curriculum. However, it is worth examining the recent UK-based study by Peter Shearn (2006). He investigated an initiative by the National Curriculum to incorporate an informal health and safety element into the otherwise formal set of school curriculum. Through teacher interviews, the author revealed the ways in which the health and safety knowledge was constructed and conveyed in the classroom in-between lessons on other subjects. Shearn found that the teachers used a wide range of styles and methods to teach safety education. Among other tactics, they used hazard identification in given scenarios, learning-by-doing, presentations by outside experts, videos, and group discussions (344-349). The curriculum content is generally influenced by numerous authorities and discourses, but ultimately it is up to the teachers to

decide what is taught, and when (351). The knowledge on safety focused on identifying risks and hazards and using mechanisms, such as personal protective equipment, to ensure safety (344-349). Shearn found that the safety education the teachers conceptualized seemed to move between safety education and risk management. The teachers mostly constructed the safety knowledge using the "dos and don'ts" format to reinforce the difference between acceptable and risky behaviours. Moreover, they conceptualized ideas about risk and safety as an extension of common sense (352). Interestingly, the teachers viewed the management of pupil behaviour in the classroom as a form of safety education. By striving to maintain classroom order and safety, the teachers believed that they were "'doing health and safety all the time' often in the form of pupil behaviour monitoring and control and raising risk awareness" (348). The teachers also used shock tactics to construct ideas about risk management and control. They primarily used stories and videos describing occupational accidents that demonstrate the harm that can be caused by hazardous activities (349).

In a similar US-based study on OHS education for youth, Linker (2005) examines the introduction of an informal occupational health and safety course to be taught during career and vocational classes. An examination of the curriculum content reveals that the knowledge is constructed around hazard identification, strategies to reduce hazards in the workplace, child labour laws, and conflict-resolution strategies to resolve problems with employers. The knowledge is also constructed in relation to work settings with which most young workers are familiar (restaurants and retail stores) (229-230). In both Shearn (2006) and Linker's (2005) studies, it is evident that the OHS knowledge is constructed in ways that reflect and emphasize the ideas of individualized safety and prevention, and de-emphasize ideas of health, and recovery from occupational accidents and injuries.

Even though research on OHS curriculum is relatively recent, the literature examining textbooks and classrooms in other subject areas, such as Science, Psychology, History, and Education can inform the present study in that they contribute to the broad understanding of the process of knowledge construction. Existing literature provides useful insights into not only the results of examinations of multiple discourses on youth and education, but also on ways to design research on the social construction of curriculum inside (by teachers and students) and outside (by the authors of textbooks and other materials) of the classroom. The research methodologies used in the present study, including discourse analysis, content analysis, personal interviews and participant observations, have been designed based on the emerging theme from the literature which suggests that when exploring the process of knowledge construction, curriculum delivery in the classroom setting is just as important as the official curriculum presented in the textbook.

The wealth of literature on classroom interactions largely focuses on how gender as a social location affects knowledge construction, and reinforcement of gendered behaviours. The literature has shown that teachers often pay more attention to male students, topics that are more relevant or of interest to male students, and give boys more classroom time to talk (for example, Beaman et al., 2006; Gallagher, 2000; Paechter & Head, 1996; Tsouroufli, 2002). There is also evidence that this tendency to favour male students varies based on the gender of the teacher and the subject matter (for example, Duffy, Warren, & Walsh, 2001). Another very common pattern noted in most of the studies is that boys received a disproportionate level of negative criticisms or reprimands from their teachers for both academic and behavioural reasons (Beaman et al., 2006; Duffy et al., 2001; Okpala, 1996; Streitmatter, 1994; Tsouroufli, 2002). Duffy et al. suggest that this may be a gendered practice that "function[s] as a type of feedback for the

thinking of males: [i]t signals to the individual that a certain way of thinking is incorrect, although not indicating the correct type of thinking" (Duffy et al., 2001, 589-590). However, many of the studies also found that boys received more acceptance, positive feedback or leniency from the teacher (Duffy et al., 2001; Streitmatter, 1994; Tsouroufli, 2002). Duffy suggests that the higher level of acceptance for intellectual interactions that is shown toward boys by the teachers may "function as reinforcements for thinking by males" (Duffy et al., 2001, 589-590). Streitmatter (1994) also reports a somewhat similar result which indicates that compared to girls, boys in general received more thought provoking questions from the teachers (126), and boys who were perceived by teachers as high achievers received more academically relevant teacher interactions (125). Moreover, while teachers tended to offer male students more interactions to help them learn tasks, they were more inclined to just do the task for the female students (126).

As a way to subvert this gendered pattern of classroom interactions, Gallagher (2000) proposes the rethinking of the traditionally patriarchal school curriculum to develop a holistic, open-ended and women-centred curriculum that situates women's experience within the process of learning and generating knowledge (73). Gallagher uses the tenth-grade drama class that she teaches in an all-girl's school, as a setting where her proposed form of curriculum is administered. In this curriculum students play an active part in the production and design of the curriculum and knowledge and in the process, introduce new classroom practices that are not used in traditional classrooms. Gallagher argues that this process allows for the teacher to address girl's experiences and needs into the curriculum (Gallagher, 2000). Gallagher's suggestion of rethinking the curriculum and classroom practices is a useful idea with potentially important implications for gender equity in curriculum. It is worth examining the implications of introducing Gallagher's proposed classroom structure in other subject areas.

2.3 Discussion

The literature review has focused on two main areas of research that are relevant to the present study: the OHS experiences of young workers particularly in North America, Australia and Europe, and the social construction of knowledge within official and delivered curriculum in general and in relation to OHS specifically. Scholarly work from these two research areas informs the present study on how the Workplace Safety 3220 curriculum represents certain types of knowledge and marginalizes others, and in examining the process in which the curriculum is developed. The review of the literature reveals that young workers are primarily employed in various precarious jobs within the formal and informal economy. Research predominantly indicates a higher than average rate of occupational accidents among young workers, particularly among young men. It is evident that OHS research predominantly relies on official records such as successful workers' compensation claims, hospitalization rates, emergency room visits, and fatalities to quantify and measure the severity of the issues related to youth OHS. Unsuccessful workers' compensation applications, and under-reporting of occupational incidents are rarely examined to gain a comprehensive understanding of how OHS is experienced among young workers.

The literature on adolescent epidemiology, psychology and physiology provides insights into the individual worker's physical shortcomings, the risk of human error, lack of OHS knowledge, poor judgment, and their sense of invincibility as important individual-level factors contributing to occupational injuries and accidents. These studies help support the notion that proper OHS education and training are key strategies to reducing occupational incidences among youth. In addition, sociological studies on OHS and youth injuries suggest that other

organizational and social factors are also crucial to understanding patterns of injury and fatality among youth. These studies note that youth targeted OHS education and training is a deterministic approach that does not take into account socio-economic factors that contribute to the overall OHS experience of young workers. They argue that these education programs only deal with one aspect of the issue and do not consider issues such as hazardous work environments, power relations at work, and the local job market, which do not always allow young workers to enforce their OHS knowledge and their rights and responsibilities. This school of thought points to the need for interventions at multiple levels to bring about improvements in education and training for workers and employers as well as legal and policy advancements and enforcements.

The review of the literature in this chapter also revealed that the process of constructing knowledge in an OHS curriculum is a relatively new area of research, which can however gain valuable insights from research studies on how knowledge is constructed in other subject areas including History, Psychology and English. Through discourse analysis and content analysis of textual materials education feminists and sociologists argue that curriculum content and its construction are political in nature; curriculum gives prevalence to dominant knowledge and social groups and marginalize others. Non-whites, women and other minorities, along with alternative knowledge such as non-scientific discourses are marginalized or trivialized in curriculum while men, whites and dominant scientific knowledge are reinforced. This review of the literature was critical in examining the data collected for the present research study.

Chapter 3 Theorizing the Construction of Knowledge

The objective of the present study is to explore the processes through which OHS knowledge is constructed in the NL Workplace Safety 3220 curriculum and how such knowledge reflects various discourses on youth and their workplace health and safety. In this chapter I review the theoretical perspective on the *sociology of knowledge*, and I derive at a specific social constructivist theory, which is utilized in the remaining chapters to understand and explain the research findings. The social constructionist perspective maintains that reality, and therefore any knowledge is formulated through social interactions, and they are shaped over time and across culture and other social factors. It suggests that knowledge is not actually about particular 'facts' or 'realities'; rather it is about how people give those realities meaning through social interactions (Berger and Luckmann, 1967). In this portion of the literature review, I examine the theoretical perspectives of a number of social theorists and education theorists all of whom use a social constructivist approach to examine and explain the social organization of knowledge. I begin with some of the fundamental work on the social construction of knowledge, including the work of Berger and Luckmann (1967), Kuhn (1996), Mulkay (1979) and Barnes (1985). Next I review Foucault's power/knowledge theory, which discusses the continuous power struggles that contribute to knowledge construction and the maintenance of power. In the third section I discuss the theoretical perspectives of a number of feminist theorists, with particular attention to the work of Dorothy Smith (1990). I elaborate on Smith's theoretical and methodological framework on objectified knowledge as it provides a useful framework to follow in the present study. I also examine the Foucauldian new sociology of the curriculum put forth by education theorists

Giroux (1981), Apple and King (1983) and Sleeter and Grant (1991). For the purpose of this research study, I develop a theoretical framework drawing on Smith's (1990) perspective on objectified knowledge, and on the Foucauldian approach to the relations between power and knowledge to explain the use of OHS knowledge to maintain a relation of ruling that dictates individual responsibility for OHS and remains silent about the responsibilities of government and the employers. This framework also explains the social biases, assumptions and omissions revealed in the analysis of the curriculum.

3.1 The Sociology of knowledge

The sociology of knowledge is a sub-discipline that engages in the examination of the social processes through which knowledge is constructed, mediated, distributed and controlled (Smith, 1990, 62; and Swidler & Arditi, 1994, 305). By recognizing the social organization of knowledge, it takes a social constructivist approach to understanding knowledge and its interconnection with social structures and relations. The sociology of knowledge is a broad theoretical framework that allows for examinations of such issues as, the influence of social locations and interest groups in determining how knowledge is distributed, or the ways in which knowledge is affected by the media which are used to preserve, organize and transmit knowledge (Swidler & Arditi, 1994). The present review of the literature on the sociology of knowledge maintains a focus on the social practice of knowledge formation and legitimation. The sociology of knowledge is used as the theoretical foundation for the present study as it deals with knowledge construction in the Workplace Safety 3220 curriculum in two phases. Firstly, the study examines how and what kinds of OHS knowledge are represented in the high school

curriculum. Secondly, it investigates how social structures (the workers' compensation system, education board, national and provincial statistics etc.), and social locations (gender, social class, youth and geographic location) influence the construction of the knowledge in the curriculum and the classroom.

Peter Berger and Thomas Luckmann are two important social theorists who laid some of the fundamental groundwork in the sociology of knowledge through their work in *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (1967). They suggest that the sociology of knowledge borrows its core idea from Marx's statement that "man's consciousness is determined by his social being" (5-6), from which it can be derived that knowledge, and all social reality attained from it, are socially constructed (3). Using the example of cultural variations in perspectives on what are social realities, Berger and Luckmann point out that reality is informed by time, culture, and other social factors (2). The authors argue that the scope of the sociology of knowledge is not limited to examining simply the various forms of knowledge, but also "the processes by which *any* body of 'knowledge' comes to be socially established *as* 'reality'" (3). In particular, Berger and Luckmann's theory examines the construction, institutionalization (60), distribution (57, 77) and maintenance (105) of a "social stock of knowledge" that emerges from the "reality of everyday life" (23), consisting the practices of customs, beliefs, habitualizations, social processes etc. (65).

To elaborate, the authors suggest that the institutionalization of knowledge through habitualization establishes an "objective reality/world" (60-61), which brings about the division of labour (57) and the social distribution of knowledge (77). Social institutions assign various roles to individuals; each individual must internalize both the stock of knowledge that is specific

to his/her social roles (e.g., role of a teacher), and that which is relevant to everyone (e.g., role of a citizen) (77). When describing the control of knowledge, the authors introduce the concept of social universes, which are used to reinforce and legitimize the institutional structures and make them more plausible during knowledge transfer (93). The social universes consist of sets of explanations and justifications for the ways in which the institutional order is organized (93). When these social universes fail to maintain the institutional structures as part of the objective world, often the elite groups in society engage in universe-maintenance to reinstate the institutional order (105). In today's world universe-maintenance involves the use of science and other schools of thought to maintain the validity of the social universes (112).

Berger and Luckmann's framework is useful for understanding the social organization of knowledge in general. However, despite the coexistence of bodies of scientific and theoretical knowledge, Berger and Luckmann maintain their focus on the social stock of knowledge, as they suggest it plays a larger role in the social order (65). In this sense, Berger and Luckmann's theory cannot adequately examine the process of knowledge construction in OHS textbooks because that is predominantly technical and scientific in nature. Also, while their theory acknowledges in passing the role of social structures and social locations in constructing knowledge, it does not call for an examination of how such social elements are reflected within the knowledge itself. Nevertheless, the process of institutionalization and the concept of social universes, as described by the authors, can be somewhat useful in explaining how technical and scientific knowledge become established and are maintained within the social structure.

Thomas Kuhn also greatly influenced the social constructionist framework in understanding the social process of knowledge construction. The central theme of his work on

the construction of knowledge involves an examination of how scientific knowledge is mediated and informed by the historical and cultural circumstances within the social order (1996) . Kuhn argues that despite the dominant image of science as an accumulation of unilateral and universal theories and practices, historical records demonstrate a continuous process in which knowledge is constructed, established, challenged, refuted and finally reestablished or replaced by a new set of theories and practices (1). In Kuhn's words, every scientific discipline generates paradigms, which are time tested "universally recognized scientific achievements" that are able to provide problems and their solutions (x). The author suggests that under "normal science," well-established paradigms are regularly used with confidence for "puzzle solving" (10). In his words, "normal science does not aim at novelties of fact or theory and, when successful, finds none" (52).

Using real life examples from Physics and Chemistry, Kuhn describes a point in time when normal science generates increasing anomalies that cannot be solved using the established scientific practices to the point that it gives rise to a "crisis" (67-68). He further theorizes that each crisis eventually gives rise to a scientific revolution, which offers an alternative paradigm that can address the anomalies (92) and bring about a significant degree of change in the relevant scientific community's worldview (111). Kuhn goes on to comment that these scientific revolutions and paradigm shifts remain invisible to the public because textbooks – our primary sources of scientific knowledge – are rewritten after each revolution to portray science as cumulative (138). This process ensures that the socially embedded (paradigmatic) nature of science can be removed from the surface of the knowledge.

Kuhn examines the social processes associated with developing scientific knowledge in particular. He describes a long-term process of knowledge construction that can only be revealed through an investigation into the history of scientific breakthroughs. Even though Kuhn's idea of reconstructing knowledge is very relevant to the present study, it is beyond the scope of the research to take a historical account of whether an actual crisis or scientific revolution has taken place within the OHS discourses. His theory makes a profound contribution to the understanding that scientific knowledge is socially constructed, particularly in terms of how scientific successes and failures determine the representation of knowledge in dominant discourses. However it does not adequately address issues such as social locations (gender, social class, race etc.) and power relations, which should be critical to the social constructivist thesis.

Sociologist Michael Mulkay's social constructivist framework is also problematic in this regard (1979). Through examinations of the work of Durkheim, Marx, Mannheim and Stark, he suggests that even though the practice of science is a social activity, scientific knowledge is not entirely shaped by social constraints (4, 8, 11). Mulkay suggests that even though 'objective' scientific knowledge is developed through the use of established procedures and agreed criteria, this knowledge is "incomplete," and "open to revision" (14). He also notes that the choice of scientific perspective to be used in a particular situation is made based on the merit of each perspective (14-15). These assertions imply that despite the use of uniform scientific methods, multiple discourses are available to address scientific problems, and that continuous research brings society another step closer to discovering the scientific 'truth'.

Mulkay leaves the impression that while the practice of science takes place within society, the knowledge itself is autonomous and free of social and cultural constraints. He does

not, for example, investigate how the scientific perspectives, the technical procedures and criteria, are negotiated within the social structures characterized by power relations and other social constraints.

In contrast, sociologist Barry Barnes' theoretical framework on the social construction of scientific knowledge seriously takes into account the social structures and social actors that contribute to knowledge construction. His work begins with a historical overview of the rise of science and scientists before moving on to an analysis of the reward, authority and communication systems in science, which manage the construction and control of knowledge in society (1985). For Barnes, scientific knowledge consists of "a developing interpretation of the world...not a reflection of the world: it is not guaranteed and secured solely by reality itself" (67). In this sense, Barnes mirrors Mulkay's (1979) interpretation that scientific knowledge is subject to change as new ways of interpreting the world are developed (Barnes, 66). More precisely, Barnes suggests that new scientific knowledge is produced through the use of existing knowledge to "extend and modify that very same knowledge" (62). In examining the knowledge construction process, Barnes gives considerable attention to the question of who in society makes the greatest contribution to and exerts influence on scientific knowledge. He suggests that while governments and industries can, and do, influence knowledge construction to some extent (for example in terms of the nature of research to be conducted, or producing politically conducive results), it is the scientific community – the universities, academics, teachers and students, who ultimately produce and control knowledge (48).

To begin with, the scientific community participates in knowledge dissemination (Barnes, 48, 56), and validation (49). Barnes observes that scientists in any field go through rigorous

training to transmit a body of uniform knowledge characterized by a set of common language, conventions, definitions and technical skills. This enables the smooth and effective conduct of communication, training and evaluation among scientists (41). He suggests that this knowledge is taught and absorbed within the scientific community in a form that minimizes the need to justify or validate the knowledge (70). Texts are expressly designed to create conviction: they usually present one interpretation only, play down any problems and uncertainties..., and occasionally present a heavily idealized picture of the historical development of the text wherein it seems to be the only tenable account of accumulating data. This style of presentation is usually reinforced by teachers themselves, in lectures and small group teachings.

Using historical examples of how the scientific community challenged the religious community, Barnes suggests that the scientific community actively and continually attempts to maintain control over scientific knowledge by expanding its own boundaries of authority and limiting that of others (90). For example, the scientists as 'insiders' restrict the knowledge generated by 'outsiders' even if strict scientific procedures are maintained in producing such knowledge (94), and they maintain a relationship of "trust and authority" with the outside community to provide it with access to knowledge (83).

In relation to the present research study, Barnes' theoretical perspective is useful in understanding how the formal education setting promotes dominant discourses as a unitary form of knowledge, and how the scientific community acts as a social constraint to shape the construction and dissemination of scientific knowledge. Even though in comparison to Mulkay, Barnes takes a significant step forward by examining the scientific community's contribution to knowledge construction, he does not go further to explore the role of other social institutions that

influence science. For example, the theory does not examine how the government and other interested parties can also be the driving forces that determine the representation of knowledge to the public.

French theorist Michele Foucault's (1980) power/knowledge theory is worth evaluating here as he goes further than Barnes (1985) in examining the social actors and institutions that participate in the construction of knowledge. Foucault considers various facets of society as agents that participate in a continuous power struggle, which contributes to the construction of knowledge and the maintenance of power. Using a broad definition of 'discourse,' that includes statements as well as social practices (Hall, 2001, 72), Foucault argues that discourses give meaning to things and produce knowledge (Hall, 2001, 73). Like Berger and Luckmann (1967) it is important for him to situate knowledge and its construction within a cultural and historical context. With his work on mental illness and sexuality, Foucault demonstrates that the concepts of madness and homosexuality, similar to any other, have been constructed through the formation of discourses within certain historical and cultural frameworks (74). In his later years Foucault focused not only on the creation of the knowledge but also on "how knowledge was put to work through discursive practices in specific institutional settings to regulate the conduct of others" (Hall, 2001, 74). He introduces the concepts of 'institutional apparatus' and its 'technologies' to suggest that social institutions are the apparatus that use various technologies to maintain control over society. Particularly, he theorizes on the relations between knowledge, power and the human body to suggest that the construction and dissemination of knowledge are used as ways to maintain social control over the body. Placing the human body at the centre of every power struggle in society, Foucault notes that, "different discursive formations and apparatuses divide, classify and inscribe the body differently in their respective regimes of

power" (Hall, 2001, 78). Foucault's work has made a significant contribution to the sociology of knowledge and conflict theory. However, some critics have argued that his primary focus on discourses could lead him to underestimate the importance of examining "material, economic and structural factors" that influence the power/knowledge structure (Hall, 2001, 78).

The sociology of knowledge takes a social constructivist approach to examining the social organization of knowledge (Swidler & Arditi, 1994). This review of the literature on the sociology of knowledge draws from a number of important theorists who focus on the social practices of knowledge formation and legitimation, helping to design the suitable theoretical and methodological perspectives for the present research. The present research study uses Berger and Luckmann's (1967) ideas on knowledge institutionalization, distribution and maintenance through social universes to explain how the knowledge in the Workplace Safety 3220 curriculum is organized, established and controlled. It also uses their concept of social universes, which can explain the process of legitimizing dominant knowledge. Barry Barnes' (1985) idea of the establishment and control of dominant knowledge by the scientific community is also useful in explaining the research data arising from the present study. In particular, Barnes suggests that the scientific community continually strives to maintain control over scientific knowledge through an expansion of its authoritative boundaries. Foucault's power/knowledge theory is more applicable in the present study as it informs the theoretical and methodological perspectives of the research. In particular, his focus on discourses and the process of knowledge construction informs the research methodology in the present study, while his discussion of the relationship between power and knowledge can help explain the research data. The power/knowledge theories can help explain the way the Workplace Safety 3220 curriculum has been developed

through continuous power struggles within the social structures of education, employment, workers' compensation and the government.

In the following section I examine feminist approaches to the sociology of knowledge. The section looks at the work of feminist theorists Donna Haraway, Sandra Harding and Dorothy Smith. Finally I develop an appropriate theoretical framework based on the reviewed theoretical approaches to explain the research findings in the present study.

3.2 Feminist contributions to the sociology of knowledge

In addition to other theoretical perspectives, feminist epistemology has significantly enriched the sociology of knowledge in the late twenty first century. One of the most prevalent contributions has been the development of standpoint theory, which suggests that in the male dominant society it is critical to explore knowledge from women's point of view to shape the way we understand and explain our world. This section discusses the contribution of three leading feminist theorists in particular, namely Sandra Harding, Donna Haraway and Dorothy Smith, and explores how their social constructivist perspectives can inform the present study's focus on the process of constructing knowledge.

Sandra Harding is one of the early theorists who gave shape to standpoint theory. Harding examines how scientists socially construct science as a body of knowledge and how it overlooks the perspectives of marginalized groups, particularly women (1991). In analyzing the process of constructing scientific knowledge, she suggests that the process is restricted by the traditionally established methodological rules and procedures used to test hypotheses. She argues

that scientists attempt to strip their hypotheses of all the values and interests that shape their development in the first place (144). Harding comments that scientists make the wrong assumption when they assume "that they could tell one true story about a world that is out there, ready-made for their reporting, without listening to women's accounts or being aware that accounts of nature and social relations have been constructed within men's control of gender relations" (141). She recommends that socially advantaged groups examine the lives and perspectives of the disadvantaged, and explore knowledge from their standpoint, not because the marginalized groups have an epistemic advantage over scientists but because examining their perspectives gives rise to new questions, data and theories, which can enhance the scientific body of knowledge. According to Harding, standpoint theory calls for "the acknowledgement that all human beliefs – including our best scientific beliefs – are socially situated, but they also require a critical evaluation to determine which social situations tend to generate the most objective knowledge claims" (142). It is particularly important for the present study to examine Harding's conceptualization of "strong objectivity" in the process of knowledge construction (138). Unlike the traditional views on objectivity which dictate the detachment of the scientists from their research subjects and their social environments, Harding suggests that strong objectivity is achieved through self-reflexivity on the part of the researchers. According to Harding, scientists must take into account the historical, social and cultural environment within which they create scientific knowledge.

Postmodern feminist theorist Donna Haraway (1991), however, argues that in the discussion on objectivity it is critical to understand that every standpoint is a minority standpoint; one standpoint is not necessarily stronger than another, and is just as prone to biases as the next one (190-191). Like Harding, Haraway comments that traditionally science is "about a search for

translation, convertibility, mobility of meanings, and universality," which calls for objectivity in the form of a single language that "must be enforced as the standard for all the translations and conversions" (187). Haraway suggests that the practice of producing and utilizing objectified scientific knowledge, primarily carried out by the masculine world, is part of the "knowledge and power game" (185) where science is a tool for maintaining power. In contrast, she advocates a feminist form of objectivity which she calls situated knowledge (188), which can create a better future for science. Situated knowledge calls for an acknowledgement that no scientist can "be simultaneously in all, or wholly in any, of the privileged (subjugated) positions structured by gender, race, nation, and class [among other critical positions]" (193). She critiques standpoint theory by pointing out that identity (for example, as women, racial minority, etc.) does not produce science and its objectivity; rather, critical positioning does. In order to transcend the masculinized practices of scientific discourses, it is important for scientists to pursue scientific knowledge with a particular focus on the social relationships between the subject matter and themselves.

Feminist sociologist Dorothy Smith has also made a significant contribution to the social constructivist perspective and standpoint theory with her work in *The Conceptual Practices of Power: A Feminist Sociology of Knowledge* (1990). Grounding her work in Marxism, phenomenology, and ethnomethodology (Laslett & Thorne, 1992, 61), Smith participates in the contemporary power/knowledge debate through this book (MacDonald, 1991, 432). Taking the standpoint of women's experiences as her starting point, she examines the social organization of knowledge in a patriarchal (male dominated) society, particularly within the practice of Sociology as an academic discipline. By doing so, Smith takes on the challenge of revealing how traditional methods of knowledge construction reproduce power relations. Smith's theoretical

perspective is particularly relevant to the present study's focus on discovering the types of knowledge and social biases that are represented within the Workplace Safety 3220 curriculum. As the discussion below demonstrates, Smith places particular interest in the social organization of knowledge within textual materials and also provides some methodological guidelines for ways to reveal and explain the social biases embedded in the textual materials.

Smith suggests that knowledge, its formation, and its use are all socially situated, and socially constructed. She uses the phrase *objectified knowledge* to describe traditional, dominant forms of knowledge that are produced by bureaucracies, and used by sociologists (we can suggest that other authorities, such as economists, educationists, etc. use these knowledge as well), including census data, labour statistics, demographic information, epidemiological data, and so forth (Smith, 1990, 4). Objectified knowledge is represented in texts such as newspapers, television, reports, policy documents, and so forth as "virtual realities" or "textual realities" (54). It can be observed that Barnes (1985) on the one hand argues that the scientific community plays the most vital role in constructing knowledge, while Smith (1990), on the other hand, suggests that while the scientific and academic community certainly contribute to the formation of objectified knowledge, they also depend on other institutional structures, such as the government, as sources of data from which knowledge emerges (4). In particular, Smith refers to census data, demographic data, employment and labour statistics, epidemiological data etc. that are produced by bureaucratic agencies. This difference may be explained by each theorist's focus on natural science (Barnes) versus social science (Smith).

Despite their differing perspectives on the role of various social structures in knowledge formation, both Barnes (1985, 41) and Smith (1990, 90) agree on the standardization of the

knowledge construction process. Smith describes that standardized methods of collecting data have evolved within professional discourses to create objectified knowledge; these methods are strictly followed without question (90). The normative order of the social world is treated as unitary, and it is not problematized in the discourse (86). Issues, questions and experiences that do not fit the framework simply get discarded (94).

Like Harding (1991) and Haraway (1991), Smith (1990) also suggests that the social construction of objectified knowledge relies on a specific process in which the social actors (including the subjects of study and the researcher) involved in the knowledge formation are removed from the actual site of experience. This is done by creating a disjuncture between "the world known in experience and the textual realities representing it in relations and apparatuses of power" (Smith, 1990, 103). This process allows for the personal "lived actualities" to be stripped-down and converted into data, case studies, concepts and categories, which are the essences of objectified knowledge (MacDonald, 1991, 433). The end product of this "complex organizational and technical process" is such that it removes all traces of the power relations from the surface of the text; so the textual reality appears to be neutral (Smith, 1990, 63).

The power relations, or relations of ruling, that Smith (1990) refers to, consist of all the social institutions and structures that are involved in the ruling and administering of the "total complex of activities" (14). These institutions and structures include the government, managers and professionals from various spheres of the academic and business worlds, who either rule, or prepare those who will rule (by selecting, training, and indoctrinating) (Smith, 1990, 14). Smith argues that objectified knowledge is produced and used by the relations of ruling in order to maintain dominance in society. Taking up the feminist perspective, Smith argues that

sociological thinking (and we can suggest other forms of knowledge) "[have] been based on and built within the male social universe, even when women have participated in its doing" (13). In her examination of scientific knowledge, Harding (1991) reaffirms Smith's argument in suggesting that "objectivist justifications of science are useful to dominant groups that, consciously or not, do not really intend to 'play fair' anyway" (143). But even within this patriarchal social universe, knowledge formation (its content, presentation, tone and agenda) varies depending on the point of view of the authority that constructs the knowledge (Smith, 1990, 63-64). Smith uses the example of a traffic court official's description of an accident to suggest that it will always be "structured by the relevances of the traffic court" (78). The description will differ from that of the victims and the witnesses.

Taking the example of U.S. and Canadian studies on mental illness, Smith demonstrates how objectified knowledge is produced and how it is used by the relations of ruling to contribute to the reproduction of power relations. She notes that past studies on mental illness (particularly Gove and Tudor's studies in the early 1970s) rely on a biased conception of what constitutes mental illness. In particular, the researchers "selected a definition that eliminates all the diagnostic categories in which men predominate over women, with the exception of schizophrenia, where the difference is not great" (114). Here, the actual social experiences of the men and women with mental ailments are removed, their problems are categorized, and then filtered to produce a particular definition. The choice of this particular definition meant that as compared to men, women constituted a significantly higher percentage of people with mental illnesses (Smith, 1990, 114). This objectified knowledge allows for a medicalization of women's conditions and contributes to the stereotype of women as weak and vulnerable. These kinds of stereotypes can contribute to the maintenance of the male hegemony that exists in society.

3.3 The construction of scientific knowledge in curriculum

In examining the Workplace Safety 3220 curriculum, it is not sufficient to simply understand the social organization of knowledge in general. The data must be analyzed against a theoretical frame of reference that specifically focuses on formal school curriculum. This section further develops the theory on the social construction of objectified knowledge to build a comprehensive framework that is fully applicable to the present study.

Smith's (1990) understanding of the social organization of knowledge and its use to maintain dominance in society has long been corroborated by education theorists calling for a new sociology of the curriculum. While Smith's theory of the social construction of knowledge encompasses all forms of mainstream knowledge (such as the ones reflected in newspapers, and census data), education theorists primarily focus on school curriculum content. For example, prominent education theorist Henry Giroux suggests,

> Knowledge in the dominant curriculum model is treated primarily as a realm of objective "facts." That is, knowledge appears "objective" in that it is external to the individual and is "imposed" on him or her. As something external, knowledge is divorced from human meaning and intersubjective exchange. It no longer is seen as something to be questioned, analyzed, and negotiated. Instead, it becomes something to be managed and mastered (Giroux, 1981, 101).

His description of the *dominant curriculum* is strikingly similar to what Smith terms as *objectified knowledge*. Giroux's use of the term curriculum goes beyond the textual materials in the textbooks, as in the case of this present research study. To him, the social construction of principles and ideologies that dictate the formation of school knowledge and its research and evaluation, the construction of meanings through interactions in the classroom and in the larger

society, are all integral parts of the curriculum (103). Giroux argues that within the realm of the dominant curriculum, students find little opportunity to generate their own meanings and knowledge; learning "degenerates into a euphemism for a mode of control that imposes rather than cultivates meaning" (104). He cautions that this form of knowledge and learning can only reinforce institutional oppression. It is evident that Giroux's argument supports Smith's suggestion that objectified knowledge is used by the institutions within the relations of ruling to maintain dominance in society. The present study examines the Workplace Safety 3220 curriculum to reveal if such relations of ruling are reflected within its texts.

Education theorists Michael Apple and Nancy King (1983) theorize on the socio-economic function of the school curriculum and their work helps to elaborate on the institutional oppression that Giroux (1981) refers to in his work. They suggest that in the new sociology of the curriculum, the selection of overt and covert knowledge presented in a school curriculum need to be problematized, as they are valuative selections from a much larger collection of possible knowledge (84). This process of problematization is necessary in revealing the "social and economic ideologies and the institutionally patterned meanings that stand behind" the knowledge presented in the curriculum (84). Apple and King argue that in the long run the school curriculum contributes to the reduction of social anomalies, and the production of an "economically efficient group of citizens" who are employed to meet economic goals (86). The larger social and economic structures utilize the school curriculum to gain social order, stability, and control (86). In this sense, the function of the curriculum is more economic than intellectual (84). Given the present study's focus on a curriculum that claims to specifically prepare youth for the workforce, the research data are examined to reveal any patterns that reflect Apple and King's socio-economic theory of the curriculum.

About a decade later Apple collaborated with Linda Christian-Smith (1991) to propose a Foucauldian power/knowledge theory that went beyond socio-economic conflict to suggest that the ideological processes of knowledge selection and organization are used by social groups and classes to serve their own interests (10). What counts as legitimate knowledge is the result of complex power relations and struggles among identifiable class, race, gender/sex and religious groups (Apple & Christian-Smith, 1991, 2; Beimer, 1992, 29-30; Sewall, 1992). Apple and Christian-Smith (1991) suggest however, that it should not be assumed that the entire body of knowledge is a "mirror reflection of ruling class ideas, imposed in an unmediated and coercive manner" (10). Rather, "the processes of cultural incorporation are dynamic, reflecting both continuities and contradictions of that dominant culture and the continual remaking and relegitimation of that culture's plausibility system" (10). All social institutions and groups are involved in a complex web of relations where one group is directly or indirectly influenced by the decisions and actions of the others (6). However, Apple and Christian-Smith suggest that even when less powerful groups are able to incorporate their perspectives into the mainstream knowledge, their ideas are usually placed under the umbrella of the dominant groups' discourses (10).

Author Carrie Paechter uses the same Foucauldian power/knowledge theory from a feminist perspective in her book, *Changing School Subjects: Power, Gender and Curriculum* (2000) to argue that the content of a curriculum, and the decisions about what is, and is not, considered 'valid' knowledge which is to be taught in the classroom are all formed within "gendered power/knowledge relations" (29). Supporting Smith (1990) and other feminist education theorists, Paechter goes on to suggest that the politics of knowledge creation is a patriarchal domain in which women's experiences and knowledge remain marginalized in the

textbook, and elsewhere, which can contribute to the continuing male hegemony (Giacomini et al., 1986; Hamilton et al., 2006; Paechter & Head, 1996; Peterson & Kroner, 1992).

There is a notable difference between Smith's (1990) conceptualization of the relations of ruling and that of Foucault, as described by Apple and Christian-Smith (1991) and Paechter (2000). Smith (1990) emphasizes a one-way relationship between the relations of ruling (such as bureaucracies) and the general public, who are subject to the objectified knowledge. She notes that a reflexive critique through textual analysis is essential in revealing the covert existence of the relations of ruling within the surface of the objectified knowledge (204). Smith recommends that the way to subvert the patriarchal relations of ruling is to engage in knowledge construction specifically from a women's standpoint (204). Foucault (1984) on the other hand observes that the general public is well aware of the power relations determining the organization of knowledge, and argues that valid knowledge is constructed through continuous power struggles among powerful social structures (175). It is evident that while Smith's theory primarily focuses on gender relations, Foucault's framework allows for an examination of a wide array of social structures and social locations (such as social class, age, and geographic location), which are interconnected with the process of knowledge construction. However, it must be noted that in more recent times since Smith put forth the social constructivist theory, she called for an examination of the school system not only to address the issue of reproducing gender relations, but also of social class and race (2000). For the present study, a combination of Foucault's (1984) theoretical framework with that of Smith's (1990) develops a more comprehensive theory that can explain the research data. In particular, Foucault's perspective on the power struggle helps to explain the construction and reconstruction of OHS knowledge at various stages of curriculum development and delivery.

In addition to Foucault's framework, it is useful to examine the perspective of education theorists Sleeter and Grant (1991) to consider how the representation of different social locations within the Workplace Safety 3220 curriculum can be explained. Through their analysis of U.S. school textbooks, the authors note that school curriculum, and textbooks in particular, continue to reflect the dominant worldview, perpetuating issues relating to gender, race, social class, disability, old-age, and other forms of inequality within the education system. For example, the written texts and illustrations in the textbooks under-represent women and racial minorities, and when they are represented, they are depicted as helpless people (86). Concurrently, the white male population is represented as successful (90). Sleeter and Grant theorize that the curriculum content is a symbolic representation of how powerful social groups explain the world and the society. This socially constructed knowledge is intended to be passed down from one generation to the next through school curriculum because it can: 1) establish the legitimacy of the dominant status of particular social groups; 2) make socially constructed relations appear as natural; and 3) allow for the filtering or screening of certain ideas and realms of knowledge (79-80). They further theorize that students are often presented with a unitary form of knowledge where there is only one version of reality. In this reality, certain ideas, interests and value judgments are emphasized and reified as valid knowledge, while others are marginalized or excluded altogether. Even though students may have the social agency to internalize everything taught through textbooks, be selective about ideas, or completely reject the knowledge, it is still necessary to be critical of the content of textbooks because they often withhold, obscure or marginalize many ideas and areas of knowledge (97).

Smith (1990) suggests that in order to reveal the social relations of ruling that take part in knowledge construction, we need to analyze the content of the texts that convey the knowledge

(152). Specific to school curriculum, Giroux (1981) and other curriculum critics (for example, Ninne, 2001) call for a "thorough reexamination of the relationship between curriculum, schools, and society" to unravel the processes through which the education system contributes to the production of cultural beliefs and economic relationships that organize the social order (Giroux, 1981, 103). These critics raise a number of questions that can help in the reexamination of the curriculum. For example, they ask, "What counts as curriculum knowledge?" "How is such knowledge produced?" "How is such knowledge transmitted in the classroom?" and "Whose interests does this knowledge serve?" (104). At the core of these questions is the understanding that power, knowledge, ideology, and schooling are interrelated elements that shape our social order (104). The new sociology of the curriculum calls for the development of a new form of curriculum, which rejects the ideological pretence that curriculum is value-free (106), and examines the type of economic, political and social interests that are reflected in knowledge (105). Giroux suggests, "to acknowledge that the choices we make concerning all facets of curriculum and pedagogy are value-laden is to liberate ourselves from imposing our own values on others" (106). He further advocates the problematization of knowledge within the social context where knowledge can be constructed, debated and mediated (for example, in the classroom setting) (106).

3.4 Developing a theoretical framework

Smith (1990) and Giroux's (1981) call for the examination of textual knowledge and the socio-economic context within which knowledge is organized, inform the fundamental methodological framework that is used as a guideline for the present research. As the following

chapter on methodology describes, the research calls for an in-depth examination of the content of the Workplace Safety 3220 curriculum and its associated documents. This examination allows for an understanding of the kinds of discourses, concepts, and social groups the curriculum reflects or silences. The study also uses a multi-methods approach to reveal who constructs the OHS knowledge within the curriculum, how such knowledge is selectively gathered and presented in the curriculum, and how the knowledge is delivered in the classroom environment. In doing so, it is able to reveal and examine some of the important elements of the "relationship between curriculum, schools and society", as suggested by Giroux, (1981, 103).

The study is grounded in Smith's (1990) social constructivist perspective on objectified knowledge, along with specific elements of the new sociology of the curriculum reflecting the Foucauldian power/knowledge theory (Giroux, 1981; Apple & King, 1983; Apple & Christian-Smith, 1991; and Sleeter & Grant, 1991). Smith's theory can help explain the processes by which knowledge construction is carried out in everyday life as a social activity. Coming from a woman's standpoint, her theory also makes an important contribution to the understanding of how objectified knowledge is used to perpetuate the relations of ruling that ensure male hegemony. The new sociology of the curriculum reaffirms Smith's perspective, specifically focusing on school curriculum as a form of representation of knowledge. More importantly, it examines the power relations and struggles that transcend gender conflict and include other forms of conflicts in relation to social class, race, age and geographic location. In understanding the processes of constructing and reconstructing official knowledge during its development, management and delivery, it is useful to go beyond Smith's perspective and focus on the social agency of social actors at every stage of knowledge construction, as theorized by the new sociology of the curriculum. This specific approach, combining Smith's theory with the new

sociology of the curriculum, assumes that knowledge construction is a product of power struggles among various interest groups and discourses. It also assumes that constructing knowledge in a curriculum is a continuous process that only begins at the writing phase and continues on during knowledge delivery in the classroom.

Chapter 4 Methodology

The main goal of the current research was to explore the ways in the OHS knowledge is constructed and presented in the Newfoundland and Labrador based Workplace Safety 3220 curriculum, and to examine how this knowledge represents different discourses on youth and their OHS experiences (particularly relating to youth from Newfoundland and Labrador). In other words, the study is intended to reveal possible biases, assumptions and omissions about youth and their OHS experiences that may be represented within the OHS curriculum. This was accomplished by answering two questions. Firstly, *what are the official constructions of workplace health, safety and risk embedded in the Workplace Safety 3220 course curriculum?* Secondly, *what social processes produce the official constructions of OHS in the curriculum?* I use a multi-methods approach to answer these questions.

The sociology of knowledge suggests that one way of understanding how a body of knowledge is socially constructed and how it relates to the social order, is to analyze the content of the texts that convey the knowledge (Smith, 1990, 152). Critical discourse analysis (CDA) is a suitable research method that allows for such examination. Van Dijk (2006) describes CDA as a type of research "that primarily studies the way social power abuse, dominance, and inequality are enacted, reproduced and resisted by text and talk in the social and political context" (352). Tonkiss (1998) suggests that it is not a process of revealing the 'truth,' but how and what social meanings and social identities are created and reinforced within a language (245-260). CDA is a useful tool in examining such language. Among other things, CDA involves an examination of the language to reveal the assumptions it represents about certain social groups and ideas, the

presence and absence of concepts, and the use of arguments to legitimize or marginalize certain kinds of knowledge (Fairclough, 2003). The present research study uses CDA as the primary method of exploration to analyze the Workplace Safety 3220 curriculum and other textual data generated from the remaining research methods.

In this study I define the term curriculum in a broad sense to include the official as well as the delivered aspects of the Workplace Safety 3220 course. I examined the textual content of the textbook and the curriculum guide, and I examined the data from a series of classroom observations where two instructors taught the Workplace Safety 3220 curriculum. In addition to examining the curriculum, I also interviewed 10 instructors and two curriculum developers. Finally, I analyzed statistical data on Newfoundland and Labrador's employment and workers' compensation claims for youth. In the following sections I elaborate on each of the research methods and also on the CDA guidelines I have followed to analyze the research data.

A review of the literature on workers' OHS experiences demonstrates that people's social locations can significantly shape their work and OHS experiences. As discussed in Chapter 2, young people's age, gender, social class and geographic location (among other factors) often shape experiences such as, the kinds of jobs they have access to, or their likelihood of practicing their right to refuse unsafe work. Social theorists make similar observations to suggest that a person's culture, social class, race, gender etc. construct their worldview, which in turn shape his/her life experiences, such as at work and in school (Berger and Luckmann, 1967 & Sleeter and Grant, 1991). In examining the Workplace Safety 3220 curriculum, I take a specific focus on how the curriculum represents ideas on age (youth), gender, social class and social locations.

4.1 Content of the official curriculum

The research for this study began with an examination of the curriculum content of the Workplace Safety 3220 course in order to observe the official construction of the OHS knowledge. The official curriculum materials, distributed by the WHSCC, consist of six components.

a) The Workplace Safety 3220 textbook. It is the primary document representing the official curriculum. The book contains 335 pages, divided into four units, with a total of 24 chapters. See table 3 for the list of chapters in the textbook. It begins with a unit providing a background introduction to OHS, including its historical background and the fundamental legislation and structures relevant to workplace health and safety (e.g. OH&S Committees, workers' compensation etc.). Next the textbook deals with rules on hazard recognition, evaluation and control. These include knowledge about workplace inspections, personal protective equipment, ergonomics, and emergency response. The third unit discusses specific hazards that may be encountered at work. The knowledge presented in this unit focuses on hazards related to chemicals, fire, electricity, machinery, confined spaces, and hearing. The last unit, entitled Personal Safety, deals with safety in areas that are deemed to transcend young workers' workplaces and relate to their personal lives. The topics discussed in this unit include safety issues related to ATV driving, drug addiction, sexual harassment, going into the woods and into the water, and a description of workplace health and safety as an area of career choice. Each chapter in the last three units of the textbook contains review questions to test the reader's knowledge on the subject.

Table 3: Chapter-Titles from the Workplace Safety 3220 Textbook. *Source: Workplace Safety 3220 (2008).*

Unit 1 Introduction to Occupational Health and Safety	***Unit 3 Hazard Specific***
1.1 Introduction to OH&S	3.1 WHIMS
1.2 The History of OH&S	3.2 Fire Protection
1.3 OH&S Legislation	3.3 Electrical Safety
1.4 OH&S Committees/WH&S Representatives/Designates	3.4 Machine Guarding
1.5 Workers' Compensation	3.5 Confined Space Entry
Unit 2 Hazard Recognition, Evaluation and Control	3.6 Hearing Conservation
2.1 Hazard Recognition, Evaluation and Control	***Unit 4 Personal Safety***
2.2 Workplace Inspections	4.1 Safety in the Woods
2.3 Personal Protective Equipment	4.2 ATV Safe Driving
2.4 Ergonomics	4.3 Water Safety
2.5 Emergency Response	4.4 Drugs
2.6 First Aid[8]	4.5 Sexual Harassment
2.7 Accident/Incident Investigation	4.6 Safety as a Career

b) Workplace Safety 3220 curriculum guide. This is a 255-page guide that corresponds to each chapter in the textbook, providing instructors with additional information on each topic, and outlines the *expected outcomes, strategies for learning and teaching, suggested assessment strategies, and resources* that can be used from the textbook and other associated sources to teach each chapter. Table 4 illustrates the layout of the curriculum guide.

Table 4: Layout of the Workplace Safety 3220 Curriculum Guide. *Source: Workplace Safety 3220 (2008).*

Outcomes	**Elaborations – Strategies for learning and teaching**	**Suggested assessment strategies**	**Resources**
• Define occupational health and safety	Teachers could begin this unit by asking students what is their idea of occupational health and safety…	• Students could complete worksheet 1.1W in the worksheet package of the WH&S rep. training guide.	Reference guide p.3

[8] The chapter on First Aid was taught using materials provided by the First Aid Instructor from St. John's Ambulance. The Workplace Safety 3220 textbook does not contain any material on the subject.

c) Educational video: ***Things You'd Better Know to Work Smart, to Work Safe.*** Produced by the Communications Division of Ontario's Workplace Safety & Insurance Board in 2001, this 13-minute video is a part of its Young Worker Awareness Program, which aims to educate youth about their workplace health and safety. Schools in Newfoundland and Labrador can borrow this video from the WHSCC's video library for free. Using a backdrop consisting of the stories of several young workers who experienced serious injuries or death at work, the video presents information on the seven things young workers should know before entering jobs. These seven things focus on the recognition and identification of workplace hazards, the right to protect oneself and ensure workplace health and safety, the need for OHS training and protective equipment, and the need to report workplace injuries and illnesses. The video also describes the three basic rights of every worker, including the right to know about workplace hazards, the right to participate in workplace inspections and health and safety committees, and the right to refuse unsafe work. Finally, the video discusses how WHMIS (Workplace Hazardous Materials Information System) can help save lives, and the importance of knowing what chemicals a worker is expected to handle on the job. In order to conduct a textual analysis, the video was transcribed using three different colour codes to represent audio, video and written text.

d) Newfoundland and Labrador Occupational Health and Safety Act and Regulations. This Act is enforced by the Department of Government Services and is designed to maintain and improve the health and safety standards in the workplace. The act is included in the Workplace Safety 3220 curriculum as reference material for students to use when understanding OHS management and the application of the Act.

e) Reference Guide for Occupational Health and Safety Committees and Worker Health and Safety Representatives. This guide is issued by the WHSCC to every workplace for use by their OH&S committees and WH&S representatives. Although the topics covered in this reference guide are all contained in the Workplace Safety 3220 textbook, the guide also provides a large sample of policy statements, terms of reference, and reports on meetings, workplace inspections and injuries.

f) Worksheet and Handout Package for Worker Health and Safety Representatives. This package is also compiled by the WHSCC to complement the reference guide described above. It provides the WH&S representatives with samples of technical forms and reports on meetings, injuries and workplace inspections that the representatives are expected to complete.

4.2 Analyzing youth employment and workers' compensation claims data

Smith (1990) identifies statistics as a form of 'objectified knowledge' that is used extensively in everyday and institutional lives. They are constructed and presented in certain ways to convey particular types of knowledge and contribute to specific discourses. In order to reveal the possible discourses, or the 'objectified knowledge' on youth and their OHS issues (on Newfoundland and Labrador youth in particular), I collected and analyzed the most recent demographic data on employed youth in Newfoundland and Labrador. In particular, I examined youth's employment by gender, region of employment (rural and urban), industry and occupation. The collection of employment-related data based on the region of employment allowed for the emergence of distinct regional patterns of employment. The analysis of the data

contributes to our understanding of who works (e.g. male and female youth, rural and urban youth), and of the industries and occupations where they work. The definition of each statistical data category was also analyzed to deconstruct the objectified knowledge. For example, the definition of "employed youth" was examined to reveal whether it accounted for youth who worked in the mainstream economy, as well as the informal economy (e.g. babysitting, gardening, farming etc.). Then the Workplace Safety 3220 curriculum was analyzed to observe if and how the objectified knowledge presented by the statistics on "employed youth" was reflected within the curriculum.

To examine what the dominant discourses suggest about youth's OHS issues, I also collected and analyzed data on successful injury compensation claims to the NL WHSCC by youth based on the nature of injury (e.g. open wounds, back pain), and the type of accident (e.g., contact with object). These compensation claims-related data were collected for the period between 2000 and 2006, and were categorized in terms of youth's age, sex, and their industry of employment. The list of industries for which data were released included: 1) transportation, 2) manufacturing, 3) forestry, 4) mining, 5) fish harvesting, 6) fish processing, 7) service, and 8) wholesale retail trade. Data for these industrial sectors in particular were released by the WHSCC because statistically, most youth were employed in these sectors. They were examined against the Workplace Safety 3220 curriculum to reveal how they related to each other. The technical definitions of the data categories (e.g. injury and illness) were examined to reveal how the terms were socially constructed, and how such conceptualizations were reflected in the curriculum.

Some other general information that was collected for this study included the list of high schools that have offered the course since 1998 and the number of students who have taken the course since its inception (categorized in terms of students' gender).

4.3 Interviews with curriculum developers

To understand how the OHS knowledge was collected, organized, and constructed in the Workplace Safety 3220 curriculum, and to reveal the goals and objectives that shaped the course, I interviewed two of the curriculum developers who were directly involved in the production of the first edition of the textbook and the curriculum guide.[9] During the initial contact with the curriculum developers I explained the topic of the research and my intent to interview them. I also provided them with the consent form and the interview schedule (see appendix A for the consent form and appendix B for the interview schedule). These documents provided the participants with detailed information on the research study, and an interview/discussion guide. Upon reviewing the documents, both curriculum developers showed an interest in participating. All communication was conducted via email (see appendix C for the phone transcript; the email communication contained the same information as the phone transcript).

Both interviews were conducted face-to-face at the participants' workplaces, at a time of their choice. The interview consent form was thoroughly reviewed with each participant before the interview commenced. In particular, it was highlighted that since their involvement in the

[9] Ethics approval was obtained from the Interdisciplinary Committee on Ethics in Human Research (ICEHR) at Memorial University for this research component. Since the textbook does not provide any information on the author, I relied on personal communication with the Director of the Prevention Services Department at the WHSCC, to recruit the research participants and to provide other background information on the course (Greenslade, 2007).

development of the curriculum was public information, anonymity could not be guaranteed. However they were assured that their names would not appear in the study. Each interview was tape-recorded. The interviews were later transcribed into texts and were coded as CuD1 and CuD2 (CuD represents ***Cu***rriculum ***D***eveloper).

The interview questions were broken down into three themes:

1) goals of the Workplace Safety 3220 course;
2) target students for the course; and,
3) curriculum development process.

Examples of questions asked include: "What are some of the main goals of developing this course?," "What are the kinds of students that this course is mainly targeted at?," "What are some of the major sources of information that were used when developing the content of the textbook?" The interviews were semi-structured, allowing the participants and myself to tailor discussions to the participants' ability to answer the questions. For example, although the first participant was the main initiator for the introduction of the course, she was unable to answer specific questions about the actual content of the textbook. Therefore the questions and the discussion in general, were modified wherever necessary.

The data collected from these interviews allowed for a detailed understanding of assumptions and attitudes the participants had toward youth and youth's OHS needs and experiences. They also provided insight into the way the course originated and evolved over time, how the content of the official curriculum was developed, and the roles played by the interest groups that were involved in these processes.

4.4 Interviews with instructors

I interviewed 10 Workplace Safety 3220 instructors to gain insight into how the OHS knowledge was constructed and reconstructed during the classroom delivery of the official curriculum[10]. After receiving the required ethics approval from ICEHR, I obtained additional approval from the school district board in which the study was to be conducted. Among the five school districts that comprised the provincial school system, I chose the Eastern School District – Newfoundland and Labrador (ESDNL).

I chose the ESDNL for a number of reasons. Firstly, this district had the highest number of schools that offered the Workplace Safety 3220 course in the 2007-2008 academic year. This allowed me access to a comparatively larger sample size. Secondly, while conducting the research, I lived and worked within this same school district. This provided me with easy access to the main-offices for the ESDNL and the WHSCC to work closely with them. Finally, working with schools within this district made the research project relatively cost effective. Geographically, the ESDNL consists of the Avalon Peninsula, the Bonavista Peninsula, and the Burin Peninsula. The ESDNL is divided into four areas: Burin, Eastern, Western and Vista. As of 2008, 44 high schools operated in the ESDNL; 18 of which offered the Workplace Safety 3320 course in the 2007-2008 academic year.

Initially I contacted course instructors from all 18 schools to request their participation in the interview. They were first contacted via emails and then by follow-up phone calls in cases

[10] Ethics approval was obtained from the Interdisciplinary Committee on Ethics in Human Research (ICEHR) at Memorial University for this research component.

where there were no responses to the emails. Once the initial contacts were established and the instructors showed interest, the subsequent interactions were carried out primarily by email (see appendix D for the phone transcript; the email communication contained the same information as the phone transcript). During the initial contact with the instructors I explained the research topic and my intent to interview them. I also provided them with the consent form and the interview schedule via email (see appendix E for the consent form, and appendix F for the interview schedule). These documents provided the prospective participants with detailed information on the research study, and the description of the interview process. Once the prospective participants showed their interest in participating, the school principals were contacted via phone or email for their approval (see appendix G for the phone transcript; the email communication contained the same information as the phone transcript). The participants and their respective school principals provided their consent to participate in the study via mail. Upon signing the consent forms myself, I sent copies of them to the participants for their own record. Finally, the interviews were scheduled. Eight of the ten interviews were conducted over the phone since that was the preferred method of interview for the participants. The interview consent form, particularly the sections describing the purpose of the study, and the issue of confidentiality, was thoroughly reviewed with each participant before the interview began. All but one interview were audio-recorded[11].

Due to the study's focus on the concept of geographic location – rural and urban life, during the recruitment process I ensured that the selected participants equally represented the rural and urban schools from the ESDNL. The Newfoundland and Labrador Department of Education's 2007-2008 listing of rural and urban schools was used to maintain this criterion.

[11] One participant did not wish to be recorded. The interview was conducted face-to-face.

Among the 18 schools that offered the Workplace Safety 3220 course in the 2007-2008 academic year, eight were from urban communities and 10 were from rural communities (Department of Education, 2007). After the initial email was sent to all the 18 instructors, they were recruited in such a way that correspondence was made with no more than five instructors from the rural areas and five from the urban areas at any point in time. This strategy was used to ensure the recruitment of an equal number of rural and urban-based instructors.

The interview questions were broken down into three themes:

1) use of the Workplace Safety 3220 textbook and the curriculum's guide;
2) target students for the course; and
3) goals of the course.

Examples of questions include: "How do you use the textbook and the instructor's guide when teaching the course?," "What types of students usually take this course as an elective?," "Is this course intended to teach youth about their OHS needs in the immediate future (for example during summer jobs), or in the long run (for their future career)?" The interviews were semi-structured, which allowed the participants and myself to tailor our discussion to the participants' ability to answer the questions. For example, one instructor could not answer any questions relating to the curriculum guide since he never received a copy of it and was not aware that it existed. Therefore the questions, and the discussion in general, were modified wherever necessary. The interviews were coded as CoI 1U, CoI 2R, up to CoI 10R, where CoI represented ***Co***urse ***I***nstructor, the following number represented the sequence in which the interviews were conducted, and U or R indicated whether the instructors were from ***R***ural or ***U***rban communities. These interviews were then transcribed into text for analysis.

4.5 Participant observation

In exploring the OHS knowledge in the Workplace Safety 3220 curriculum, the content of the textual material presents only one aspect of the curriculum. Education researchers often differentiate between the *official* or *planned* curriculum and the *actual* or *delivered* curriculum to suggest that they are never the same due to various factors including the instructors' efforts to tailor the curriculum to the students' interests (Kelly, 2004, 6). Therefore, the curriculum delivery process is a crucial step when OHS knowledge is socially constructed, whether to reflect the official curriculum found in the textbook and the curriculum guide, or to reflect the interests, needs and experiences of the instructors and/or their students. To observe how instructors delivered the course material, and how the OHS knowledge was constructed and reconstructed through classroom interactions between instructors and students, I conducted participant observation of Workplace Safety 3220 classes for five sessions in two high schools located within the ESDNL. While the observations were snap-shots of only five sessions in two high schools, they did provide a look at the knowledge construction process and complemented the instructor interviews.

A critical step before conducting the participant observations was receiving ethics approval from the ICEHR, as they involved human subjects. As classroom interactions were an important component of the observations, and students actively participated in them, their indirect participation in the study required consent. Since the student body consisted of under-aged youth, it was necessary to receive consent from their guardian. Appropriate consent was received both from the ICEHR and then the ESDNL. The course instructors in all 18 schools were contacted to request their participation in the observation when they were invited to

participate in the interviews. They received copies of the consent form for the participant observation, which provided details about the purpose of the study and the observation process (see appendix H for the instructor and principal consent form). This provided the prospective participants with the opportunity to understand the scope of the research and their participation in it. It was explained to them that the decision to conduct the observation at any school was dependent upon several factors including the instructor's and the school principal's approval to participate in both the interview and the observation. I conducted one participant observation in an urban school and another in a rural school so as to capture the two different geographic locations. The Newfoundland and Labrador Department of Education's 2007-2008 listing of rural and urban schools was used to maintain this criterion (Department of Education, 2007).

A school from the Eastern area of the ESDNL was selected to represent an urban school, while another from the Western region was selected to represent a rural school[12]. Once the instructors agreed to participate in the research study, the school principals were contacted via phone to request their approval (as per the ESDNL's requirement). At this stage the parent/guardian consent forms were mailed to the instructors to be distributed to the students (the form already contained my signature as the researcher) (see appendix I for parent/guardian consent form). Each student received two copies of the form: one was for the parents/guardians personal record, the other was returned to the instructor and was photocopied and shared between the school and myself (as per the ESDNL's requirement). The students were given a two-week period to return the consent forms. In both schools this proved to be a sufficient amount of time. During this two-week period the instructors and I scheduled the observations of

[12] The rural versus urban status of the school was determined based on the Eastern School District's list of high schools in each economic zone the Newfoundland and Labrador.

five sessions of the Workplace Safety 3220 classes in each school.

On the first day of observation, I met with the instructors and the principals to receive their written consent and answer any questions they had. Before beginning the observation on the first day, I introduced myself to the students, explained to them the purposes and objectives of the observation, and responded to questions and comments. It took 10 days to complete the observation in the urban school, and nine days at the rural school.

The observations were conducted from the back of the classroom and were recorded on a laptop computer. While many patterns emerged from the classroom observations, the scope of the observation was limited to understanding the process of knowledge construction and reconstruction through classroom interactions among the students and the instructors. Notes were taken on these interactions as they unfolded in the classroom and they were later categorized based on themes.

Out of the five sessions that were planned to be observed, the fourth session at CoI 7R's school could not be conducted as the students had to prepare for an OHS presentation later that day for the entire school (every instructor and student attended the presentation held at the school gymnasium). Unfortunately the participant observation could not be carried out during the presentation due to the presence of under-aged students who were unaware of the research and thus did not consent to participate. The second session in CoI 7R's class was taught by a substitute instructor as the regular teacher had other prior engagements.

4.6 Analysis

As previously mentioned, I used a number of research methods to collect data on the official and delivered curriculum of the Workplace Safety 3220 course, and to examine how it represents ideas about youth and their workplace health and safety experiences. The particular combination of methods was critical in obtaining rich data from a number of inter-related sources, a collection of which aided in revealing the continuous process of knowledge construction. Firstly, each research method provided insight into the dominant and alternative discourses on OHS and education in relation to youth, gender, social class and geographic location. Secondly, they revealed the process of knowledge construction during the development of the official curriculum, as well as during the delivery of the official curriculum in the classroom setting. I use critical discourse analysis (CDA) as the methodological framework to analyze data from each of the sources of data.

During the initial data analysis process, I reviewed the data without any CDA guidelines. I allowed for any patterns and observations to emerge, without imposing any research criteria. This ensured that important observations were not overlooked simply because they were beyond the scope of the research criteria. While this process produced some observations that were not directly relevant to this research study, it also produced key observations that could otherwise have been overlooked. For example, during the first reading of the textbook and the curriculum guide, I observed numerous grammatical errors; however this observation was not directly related to this study[13]. At the same time, I also discovered that there was a distinct pattern in the

[13] This information was used to proof-read the textbook and the curriculum guide and the edits were presented to the WHSCC. This information was later used by the WHSCC to edit the materials before printing copies for the Fall 2008 school-year. The WHSCC actively participated in the present research by providing statistical data, textual materials, background information, and other research support. In return I helped with the improvement and

types of occupations that were mentioned or overlooked throughout the textbook. While the observation of the representation of occupation-types was not a predetermined research strategy, it provided important insight into how the curriculum reflected certain types of OHS knowledge and represented certain social groups, and social classes.

During the subsequent readings of the textbook, I particularly examined how the OHS knowledge was constructed in relation to the concepts of youth, gender, social class and geographic location. For example, I examined the content of the textbook to observe how concepts such as OHS, risk, and hazard were defined, described and presented in relation to the idea of gender. When the data from the interviews and participant observations were re-read, I maintained a focus on the ways in which the participants described the OHS knowledge, their students, and the social context within which the course was taught. This process helped to reveal the discourses in participants' accounts about OHS, youth, gender, social class and geography.

In the next phase, I reviewed the textual documents relying on a series of the guidelines suggested by CDA experts Norman Fairclough (2003), Baker (2000), Riggins, (2007), Potter and Wetherell (1994) and Macaulay and Brice (1997). One of the most important concepts to take note of in the present study is intertextuality. It is the relationship between different external yet connected texts, information and social events. Examining the intertextuality of a text helps to socially situate it and understand the voices that are present and/or absent in it (Fairclough, 2003, 47). In the present study a number of inter-related documents, including acts and regulations,

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promotion of the Workplace Safety 3220 curriculum. In addition to editing the curriculum materials, I also attended their meeting to develop an OHS based game show for youth, providing them with game related ideas and sharing preliminary research findings to help them develop improved strategies to educate youth about OHS. I also edited the game show guidebook.

have been examined to understand the relationship between them and the curriculum. The intertextuality between the curriculum materials and the interview and participant observation transcripts, is also important to reveal the differences between the official and the delivered curriculum. In addition to intertextuality, it is also important to examine who the target audiences are for each of these textual materials (Riggins, 2007). The targeted audience can be directly identified, or it may be implied (Riggins, 2007). To understand the scope of the curriculum content of the Workplace Safety 3220 course, it was critical to identify the targeted audiences.

Next the discourse analysis focused on the practices of exclusion, inclusion and prominence. These are the practices of including or excluding specific types of knowledge, and giving prominence to some and not others (Fairclough, 2003, 136). This was one of the most common practices, which revealed the types of discourses, social groups, and social structures the curriculum did or did not represent, and the frequency with which each element was mentioned. The analysis also involved revealing the types of assumptions that were prevalent in the Workplace Safety 3220 curriculum. Assumptions are shared meanings that are taken for granted and viewed as 'common grounds.' While they are well-established ideas, they can however be shaped and influenced by the exercise of social power, domination and hegemony. The process of identifying assumptions embedded in the textual materials helped to reveal the values, beliefs and attitudes they reflected about youth, their OHS, gender, social class and geographic locations (Fairclough, 2003). Membership categorization is a closely related concept which describes the process of categorizing people, places, and activities, and attaching descriptions to each category (Baker, 2000, 100-101). For example, the Workplace Safety 3220 curriculum and the instructors often implied that the readers of the textbook were predominantly 'at risk' youth who are prone to taking risks and having a sense of invincibility. Revealing how

the curriculum used membership categorization to organize the OHS knowledge greatly contributed to understanding the assumptions made about certain groups (99). The processes of assumption and membership categorization often go hand in hand with legitimation. When a text assumes a belief or provides an argument, it often uses the process of legitimation to justify and offer explanation for such argument. Legitimation can promote certain acts and behaviours and discourage others. The research data in the present study were examined for possible sanctioning or discouraging of behaviours within the OHS discourses (Fairclough, 2003).

Some other CDA guidelines used in this research include an examination of the hierarchy of topics, rhetorical organization of numbers and gendered language. Hierarchy of topics is the order in which topics are presented in a particular text. It can indicate the level of importance placed on each topic in a textbook (Riggins, 2007). Rhetorical organization of numbers refers to the style or format in which numerical data are presented and examined in a particular text. This involves the methods of quantification to construct and present facts which may be decontextualized, or juxtaposed with vague, qualitative descriptions that are not necessarily clear or consistent. This practice of organizing numbers to construct facts is often used to legitimize or reinforce ideologies, and sanction or prohibit behaviours (Riggins, 2007, and Potter & Wetherell, 1994). This practice was notable in the Workplace Safety 3220 textbook and curriculum guide. Finally, critical discourse analysis helps to reveal gendered language in a text. It is the type of language that represents gender biases and gender stereotypes (Macaulay & Brice, 1997). An examination of the gendered language in the Workplace Safety 3220 curriculum and in the interview transcripts was critical in understanding how the concept of gender was defined and described in relation to youth and OHS.

In order to complement the qualitative data generated from CDA, I also conducted a

content analysis (CA) of the Workplace Safety 3220 textbook and curriculum guide. CA is the examination of a text to count the occurrence of different words, statements, concepts, images, and ideas. An analysis of the frequency of these terms and images can reveal the conscious and unconscious beliefs, attitudes and values of the creators of the text and the social discourses they represent (Wallen & Fraenkel, 2001). In the present research study, the frequency of a number of words and themes was calculated to contribute to the findings gathered through CDA. Firstly, I counted the number of pages devoted to each chapter in the Workplace Safety 3220 textbook and curriculum guide. This data, along with the CDA technique of examining the hierarchy of topics, helped in determining the relative importance given to each subject. This, in turn, contributed to our understanding of how the curriculum was organized to represent and highlight certain types of knowledge and marginalize others. Next I counted the frequency of certain OHS related words within the Workplace Safety 3220 textbook, curriculum guide and the video to examine the types of knowledge they represented, emphasized and marginalized. It was generally assumed that the high frequency of a word appearing in the curriculum indicated an emphasis on a certain topic and vice versa. The list included different forms of the words – accident, death, disease, hazard, health, illness, injury, loss, mental health, prevention, protection, responsibilities, rights, risk, safety, and violence. The list was not predetermined; I allowed the terms to emerge from several readings of the curriculum and the literature on youth OHS. In the same way, I also counted the occurrence of words that indicated a specific gender. The list included his, him, he, man, men, her, she, woman and women. This quantitative data aided in the analysis of the gendered and de-gendered languages reflected in the official Workplace Safety 3220 curriculum.

After several readings of the official curriculum, it became apparent that the curriculum places emphasis on certain occupations and not others. Based on this observation, I collected

data on the types of occupations the curriculum identifies and their frequencies. The study revealed that the curriculum mentions various occupations in relation to three basic factors. Firstly, some occupations were mentioned in relation to their expertise in helping others to reduce occupational hazards (e.g. supervisor, ergonomist, engineer etc.). Secondly, the curriculum mentions certain occupations in order to discuss the specific types of hazards, and hazard-controlling mechanisms associated with them (e.g. construction worker, logger, painter, etc.). Finally, some occupations are mentioned in relation to the rules and regulations applicable to them, or about how they can enforce those rules and regulations (e.g. police, computer programmer, director etc.).

Finally, I examined the review questions at the end of each chapter to find out the types of questions that are presented in the textbook. This analysis helped to reveal the types of knowledge the Workplace Safety 3220 curriculum emphasized. I categorized the review questions into five different types based on the way the questions are constructed. The questions asked the reader to 'list', 'identify', 'define', 'differentiate or distinguish', or 'describe' concepts. Among these questions, the first three types (list, identify and define) primarily call for memorization skills, reflecting technical and objectified knowledge. For example, in the chapter on Emergency Responses, question four asks for a list of the seven types of hazards or emergencies listed in the chapter. The two remaining types of questions 'differentiation' and 'description' call for reflective and critical thinking skills. For example, question seven from the same chapter asks to describe the seriousness of a chemical spill. A content analysis of the review questions revealed the curriculum emphasis on certain types of knowledge.

The quantitative results from the content analysis have not been analyzed on their own as indicators of the types of OHS knowledge the curriculum represented. Using CDA, the contexts

from which the data have been collected were taken into consideration.

When conducting CDA and CA, and when reading the research findings, it is important to recognize that the same text can generate innumerable types of observations, and those observations can generate multiple interpretations. The observations and their interpretations are guided by the research questions and the researcher herself/himself. As Dorothy Smith's (1990) social constructivist perspective suggests, it is imperative to acknowledge and situate the researcher within the study. In the following chapter I examine and explain the research findings by concentrating on the question of how the Workplace Safety 3220 curriculum is constructed, and maintaining a focus on the theoretical framework developed based on a social constructivist perspective.[14]

[14] I had the opportunity to present my preliminary research findings at a number conferences and seminars, which helped with my data analysis. For this I owe my gratitude to the organizers of the following conferences and seminars: Shining a Light on Health and Safety on the Labrador South Coast: Symposium and Workshop; Atlantic Networks for Prevention Research's Conference; SafetyNet's Brown Bag Seminar; and the Public Health and the Agricultural Rural Ecosystem Conference.

Chapter 5 The Dominance of Objectified Knowledge

An analysis of the OHS knowledge embedded in the Workplace Safety 3220 curriculum reveals the predominance of a form of technical knowledge that can be described as what Smith (1990) calls *objectified knowledge*. Objectified knowledge is characterized by technical and scientific forms of knowledge that are produced through standardized methods of data collection that leave little or no room for anomalies which can arise in the social world (Smith, 1990, 94). This type of knowledge is constructed through the particular process of removing the social actors and their personal "lived actualities" from the site of experience. This process converts people's actual experiences into discrete data that are decontextualized and can be quantified, measured and generalized. The Workplace Safety 3220 curriculum reflects objectified knowledge in that it conceptualizes OHS knowledge predominantly as concepts, ideas and terms that can be easily quantified, measured in units, and controlled. The knowledge is presented primarily in a decontextualized format where the readers are not exposed to the social actors and their experiences, which are at the root of the knowledge. In this chapter I examine the content of the official and delivered curriculum of the Workplace Safety 3220 course to analyze how the social constructivist perspective, and particularly Smith's (1990) theoretical framework, can explain the OHS knowledge embedded in the curriculum. As the research findings demonstrate, although objectified knowledge can be very effective in conveying knowledge that can be quite applicable in certain circumstances, it becomes problematic when it removes all signs of power relations that are embedded in the experiences that give rise to the knowledge. In the case of the Workplace Safety 3220 curriculum, the course can use objectified knowledge to effectively teach

young workers about many OHS regulations, concepts and techniques to ensure workplace health and safety, but it omits knowledge on how the application or enforcement of these regulations, concepts and techniques can be mediated by factors including, power relations at work, and access to jobs and training for youth.

5.1 The construction of objectified knowledge

The OHS knowledge in the Workplace Safety 3220 curriculum is primarily delivered as technical and objective information on a specific selection of health and safety related subjects. Interviews with curriculum developers revealed that the development of the content of this high school curriculum heavily relied on reference material from a post-secondary safety-engineering course from a local college. The Workplace Safety 3220 curriculum reflects the technical language used in the safety-engineering course. This technical knowledge in the high school curriculum primarily relays information on four topics. Firstly, the textbook discusses rules and procedures to follow during a given OHS-related scenario. For instance, what protective equipment should be worn for working with specific chemical hazards (85), or what part of the legislation applies to the "right to refuse unsafe work" (28). Secondly, it highlights definitions of terms and concepts such as *hazard, internal responsibility system, watt,* and *voltage*. The curriculum also discusses the functions and impacts of given OHS-related rules and incidents. For example, the curriculum notes the functions of an OHS committee, and the impacts of OHS-related tragedies in Newfoundland and Labrador (e.g. the sinking of the Ocean Ranger, and the industrial diseases and fatalities linked to working in the St. Lawrence mine). Finally, the curriculum provides some information on historical and statistical trends relating to occupational

injuries and diseases. These include brief statements regarding when various OHS related legislation was introduced, trends in the rate of eye injuries and so on. Personal interviews with the Workplace Safety 3220 instructors revealed that while they frequently relied on external sources such as the Internet, guest speakers, newspapers, videos and pamphlets to enhance and complement the curriculum content, for the most part they still focused on the subject areas contained in the textbook. In terms of the course content, the official curriculum and its actual delivery in the classroom remain very similar.

Overall, the OHS knowledge in the Workplace Safety 3220 curriculum can be characterized as primarily technical and objective in nature. It takes a scientific and technical approach to conceptualizing the knowledge that treats OHS management as a systematic process that can be scientifically quantified, categorized and operationalized in every workplace regardless of the specific work settings, the workers and employers who are involved in the process and the socio-economic structures within which OHS management is experienced. The definitions, categories and lists of terms and concepts are also presented as unproblematic and uncontested, leaving no room for questioning the knowledge or allowing alternative understanding of the ideas. This form of objectification decontextualizes the OHS knowledge so as to create discrete, quantifiable data that are detached from the actual human experience from which the knowledge emerges in the first place.

This objectification of knowledge may not be a problem for terms such as *watt* and *voltage*, however other terms such as *emergency*, *hazard* and *internal responsibility system* may be more ambiguous and contested across disciplinary boundaries and between workers, employers and OHS experts. For example, the chapter on Emergency Responses categorizes

emergencies into seven discrete types – fires and explosions, work accidents and rumours, chemical spills, floods, hurricanes and tornadoes, earthquakes and civil strife. Such categorization establishes the boundaries regarding what gets identified (and what does not get identified) as an emergency. It leaves no room for other forms of emergencies to be treated as such.

An examination of the ways in which the concept of *hazard* is represented within the Workplace Safety 3220 curriculum clearly demonstrates the practice of objectifying knowledge. Hazard is categorized into physical, chemical, ergonomic and biological hazards, and the curriculum places considerable emphasis on hazard recognition, evaluation, and control (using engineering, administrative, and personal protection strategies) to prevent occupational injuries. Hazard is primarily constructed as something that can be quantitatively and categorically identified, evaluated, and controlled through regular workplace inspections and corrective measures before and after any occupational accidents. The unit in the textbook that is devoted to hazard identification and control (unit 2) is framed in such a way that it reinforces hazard identification and control as a prevention mechanism to keep workplaces safe and maintain business objectives. The chapter on Workplace Inspection notes that "[t]he primary purpose of inspection is to detect potential hazards, so they can be corrected before an accident occurs. The secondary purpose is to improve operations to increase efficiency, effectiveness and profitability" (69). The discourse on the systematic and scientific process of hazard evaluation and control is reflected in one of the systems for hazard minimization described in the curriculum. When describing the systematic division of tasks of the OH&S committees and/or WH&S representatives/designate to monitor workplace health and safety, the textbook describes the process of prioritizing hazards based on an assessment of how urgently each requires to be

eliminated or minimized (39). A similar scientific approach is suggested in appendix 2.1-B for minimizing chemical hazards in particular. To prevent "serious health effects associated with gases, vapours and solvents," the textbook suggests the substitution of the existing solvent with a less hazardous one, and the rotation of workers handling the chemicals as a way to reduce their exposure (277). These examples demonstrate how hazard is constructed as a clearly identifiable element that can be scientifically assessed and ranked based on the degree of risk involved, and addressed according to their associated level of risk.

The curriculum also uses quantitative data produced by workplace health and safety organizations and the government to conceptualize workplace health and safety. For example, the textbook reports that "70% of all eye injuries result from flying or falling objects" and 20% from exposure to harmful chemicals (82); and that 60% of the victims of confined space fatalities are the rescuers rather than the initial victims (187). This statistical information reflect a rhetorical organization of numbers, which reinforces the idea that OHS management is mostly technical and quantifiable in nature. These kinds of representations reinforce the message that ooccupational incidents are largely objective, discrete, and in this case quantifiable. These data are presented outside of the contexts within which the incidents have occurred. For example, even though the content of the textbook mentions that "70% of all eye injuries result from flying or falling objects," it does not indicate who commonly experiences such injuries, or the type of workplaces where such injuries are commonly experienced. Moreover, it does not discuss how such injuries affect young workers in particular.

The scientific and technical representation of OHS knowledge transcends the official curriculum to student evaluation and testing in the classroom. The curriculum's reliance on definitions, step-by-step procedures, and numerical and technical representation of OHS

knowledge is reflected in the types of review questions listed at the end of each chapter. Out of 340 review questions presented in the textbook, a large majority of them require students to restate the official curriculum by identifying (f=186), listing (f=78) and defining (f=28) concepts. This leaves little room for critical questioning or engagement through questions that require students to describe (f=43) and differentiate (f=5) concepts. This reinforces the technical and objective character of the OHS knowledge and establishes it as a fixed body of knowledge. While many instructors used evaluation techniques that went beyond the chapter-end questions, and included research projects and other creative activities, most of these tasks still required students to merely recall technical and objective knowledge from the textbook and from outside sources. These evaluation questions and activities were mostly limited to defining terms, identifying rules and regulations and so on; they rarely asked students to explore the lived actualities behind these technical knowledge. As CoI 4U explained,

> They'll [students] do research assignments. But they are very specific. I'll give them some specific questions to answer. I'll go find an article on this topic and answer these questions on…go through the occupational health and safety regulation and find out which ones apply. Or what is the regulation for this…they'll go find it. How deep can a trench be before you have to have sloping…So it's very specific. And very factual.

A considerable part of the observed classroom-time was spent on completing the answers to these review questions and not on the actual delivery of the OHS knowledge. These examples demonstrate the construction and reinforcement of objectified knowledge within the official and the delivered curriculum of the Workplace Safety 3220 course.

In the next section I describe the curriculum's focus on quantifying and monitoring occupational incidents to demonstrate how the language of the curriculum reinforces objectified knowledge.

5.2 The curriculum's focus on compensable incidences

An analysis of the Workplace Safety 3220 curriculum reveals a number of patterns and themes throughout its content, which reaffirm the finding that the curriculum uses objectified knowledge to teach about OHS. One of the critical ways this is perpetuated is through the official curriculum's primary focus on physical risks, health and safety, as opposed to mental health and safety. The curriculum uses a strictly technical and objective discourse to construct physical health so as to present it as something that can be quantified, measured and controlled in statistical and financial terms. In fact, like other OHS curricula (for example see, Shearn, 2006 and Linker, 2005), it reflects a specific interest in physical injuries that are tangible and easily quantifiable as opposed to physical illnesses and occupational diseases, which can often be difficult to diagnose, identify, quantify and manage (Messing, 1998). Furthermore, the curriculum has little room for mental health and overall employee wellbeing. In general it can be observed that OHS issues that might be ambiguous in their definitions, categorizations, quantification, control and in demonstrating their work-relatedness are left out of the curriculum as they do not fit the objectified discourse.

These patterns can be noted in a number of ways. The discussion on *risk* in the Workplace Safety 3220 textbook includes the definition of risk, the description of ergonomic risks, confined space risks, and other environmental risks caused by noise, weather, vibration, workspace and so on. The textbook also goes into considerable detail discussing risk management, i.e. risk evaluation and control. Finally it briefly describes the risks associated with drug abuse. The text defines a risk factor as "something that may cause or contribute to an injury." Risk is constructed primarily in relation to physical risks, such as ergonomic risks and risk of exposure to hazardous work environments containing toxic gas or not having enough

oxygen, as opposed to social determinants of risks such as power imbalances, discrimination or fear of firing. When discussing risk management, the text focuses on minimizing physical risks, and acute versus chronic risks using strategies such as engineering controls, administrative controls and personal protective equipment. The curriculum presents a technical knowledge on the process of risk management that describes how risks and hazards are ranked based on their severity and addressed accordingly. This knowledge marginalizes chronic risks, such as exposure to low doses of a toxic chemical.

The term *safety* receives a similar treatment in the curriculum. It constructs safety as something that can be achieved through systematic hazard recognition, evaluation and control and through regular workplace inspections. It is assumed that unsafe working conditions are easily identifiable and quantifiable through inspections. The textbook describes safety practices predominantly in relation to the prevention of workplace injuries. When describing the OHS responsibilities of the workers and employers, the curriculum focuses entirely on safety of the physical health. This discourse on the safety of the physical health goes beyond the workplace to include personal safety in the woods, in the water, and when driving ATVs. However, the possibility of identifying and inspecting the workplace for elements that can be detrimental to the mental health of the worker is not raised in the curriculum. Within this conceptualization of safety, the term "protection" is always used in relation to the protection of the worker's physical body, particularly with the use of personal protection equipment. The official curriculum leaves no room for possible alternative constructions of "protection" in relation to workers' mental health.

The term *health* is used in the Workplace Safety 3220 textbook most frequently to refer to the occupational health and safety policies, programs, and inspections in general to promote a

health and safety culture where both employers and employees know and enforce their responsibilities. When describing specific health risks, the textbook predominantly discusses physical health, and gives particular attention to health risks resulting from chemical hazards. For example, it discusses exposure to toxic chemical by contact, inhalation or ingestion, and explains the importance of using protective respiratory equipment to protect health. This construction of health is useful in understanding only one aspect of health issues in OHS.

Within the realm of physical health, the official Workplace Safety 3220 curriculum focuses primarily on a culture of prevention and protection. However, when it does go beyond the idea of prevention to discuss occupational incidents, the curriculum places significantly greater emphasis on physical accidents and injuries as compared to physical illnesses and diseases. A cursory examination reveals that the words *accidents* (*f*=168) and *injuries* (*f*=253) are far more common in the text than words such as, *diseases* (*f*=19) and *illnesses* (*f*=26). More importantly, an examination of the contexts within which each of these words are used reveal that key OHS concepts such as hazard, risk, health and safety are primarily constructed in relation to physical injuries and accidents as compared to illnesses and diseases. For example, the chapter on Workers' Compensation focuses almost entirely on occupational injuries. When introducing the workers' compensation system in the province, the textbook mentions that the system is administered by the NL WHSCC and it serves over 14,000 employers and 10,000 injured workers annually. It goes on to tell the reader to "Think carefully about the 10,000 injured workers in our province!" (43). Workers with occupational illnesses are excluded from the language in this section. Moreover, the chapter provides the reader with information on how to handle, report, and request claims for occupational injuries, but does not include issues that workers may have in dealing with detecting, reporting and being compensated for occupational

illnesses. For instance, it does not give the reader any information on how to determine if a disease is related to and caused by the employee's work environment.

Ideas about illnesses and diseases are also absent from the chapter on Personal Protective Equipment. Throughout the chapter, a worker's health and safety are entirely constructed based on the idea of avoiding accidents and injuries through the help of protective equipment. For example, when discussing the protection of the eye from hazards, the textbook suggests that "Many work environments exist where the eyes and face must be protected from injury by physical and chemical agents such as solvents, flying or falling particles, protruding objects, radiation, etc." (82). It does not discuss the potential risk of contracting diseases and chronic conditions such as respiratory diseases, loss of hearing, musculoskeletal diseases etc. from short or long-term exposure to chemical agents, loud noise, or repetitive tasks.

The Workplace Safety 3220 curriculum does not reflect the fact that scholars and practitioners continue to struggle with the conceptualization of injuries and illnesses within health and safety discourse. A review of the literature on OHS indicates that the definition of injury can be complex and unclear (Langley, 2004). For example, the result of a brief exposure to a toxic gas is often called an injury, whereas the eventual effect of a long-term chronic exposure to the same gas at low concentration may be called a disease (Langley, 2004, 69). The curriculum barely describes injuries resulting from chronic exposure to occupational risk factors. It suggests that "[n]ot all risk factors are severe enough or occur over a long enough time to cause or contribute to an injury" (100). When describing the systematic process of ranking hazards based on their level of risk, the textbook lists 'length of exposure' as one of the factors that determines the risk. However, it does not go beyond this to consider injuries and illnesses that may result from long-term exposure to any hazard. These areas of ambiguity in defining and

categorizing occupational incidences are stripped out of the technical curriculum so as to present OHS management as an easily quantifiable and controlled system.

In addition to the statistical representation of the knowledge on physical health and safety, the curriculum often uses financial units of measurement to further objectify the knowledge. For example, the official curriculum constructs accidents as clearly quantifiable incidents that can cause fatalities and injuries and result in human and financial costs that can be quantified in terms of lost productivity, increased operational and hidden costs, loss of pay, and the costs associated with compensation assessment. Similarly, the curriculum describes injuries in relation to increased production costs, decreased efficiency, medical and travel costs borne by the employer, compensation costs, and other associated costs, such as wasted materials, equipment damage, or other property loss. Furthermore, it uses financial quantification to construct occupational fatality by suggesting that workers' compensation provides benefits for the surviving family members of a dead worker (49). This financial representation of OHS knowledge is also common in the classroom delivery of the Workplace Safety 3220 curriculum.

The curriculum's focus on physical injuries and their associated human and financial costs is also reflected in the video and in the classroom presentation of the curriculum. The textbook recommended video, entitled *Things You'd Better Know* conceptualizes occupational incidents solely in terms of the quantification of youth fatalities, serious injuries, and the financial costs associated with employer's financial penalty, loss of productivity and so on. Participant observations revealed that instructors often use financial representation of occupational accidents and injuries. For example while teaching students about machine guards and types of mechanical injuries, one instructor gave a series of examples of injuries caused by failed machine guards and in each case quantified the injuries in financial terms. He identified

the loss of production, the replacement of damaged equipments, the cost of replacing the injured worker, overtime pay, and injured worker's loss of pay, as some of the outcomes of the mechanical injuries. Interviews revealed that most of the Workplace Safety 3220 instructors maintain a focus on injuries and other tangible and quantifiable occupational incidents in relation to their perceptions on the goals of the course. At least five instructors identified lowering the number of injuries, accidents and fatalities as the primary goal of the course. The remaining identified goals include, preventing injuries, reducing the risk of injuries, saving the government and employers money on workers' compensation claims, promoting safety and creating awareness on OHS. The primary focus is on the statistical and financial quantification of the costs of occupational injury, reflecting a technical discourse on OHS management. This quantitative approach to presenting the OHS knowledge helps to illustrate to the reader some of the economic effects of occupational injuries at work. However, this process of quantification of OHS draws significantly more attention toward the financial impact of the occupational injuries, which de-emphasizes the actual experiences attached to the accidents and injuries. A better understanding of these actual experiences may prove very useful for developing more effective prevention strategies at the individual and organisation levels.

In contrast to physical health, the Workplace Safety 3220 curriculum places very little emphasis on mental health, issues related to work-life balance, or workers' overall wellbeing. The official curriculum does not contain a separate chapter on work-related mental health issues. Mental health issues are briefly mentioned ten times throughout the Personal Safety unit of the textbook in relation to individualized problem behaviours such as alcoholism, drug-use, and sexual harassment, or in relation to seeking and obtaining expert help. Work-related psychosocial risks such as work-related stress, work overload, fear of job loss or layoff, secondary-trauma,

violence in the workplace, and their consequences are largely ignored. Issues relating to mental health are largely conceptualized as problems unrelated to or not originating in the workplace, which in turn serves to marginalize and ignore work-load, work-related stress, aggression and violence in the workplace, and relationships with supervisors and co-workers. Among the ten instructors interviewed for the study, only one of them identified these issues and commented that he went beyond the official curriculum to discuss them (CoI 5U). It is clear that these issues are marginalized for the most part within the OHS discourses presented in the Workplace Safety 3220 curriculum.

Interestingly, even when the classroom discussions provide some context for the technical knowledge, these discussions often repeat and reinforce the fundamental premise developed in the official curriculum with the aid of objectified knowledge – that of assuming individual worker responsibility for OHS awareness and prevention. The statistical and financial quantification helps to conceptualize occupational accidents, injuries, risks and physical health in general as OHS issues that can be clearly measured, controlled and traced at the level of the individual worker. In other words, objectified knowledge implies that each workplace accident, injury and fatality can be traced back to the individual worker who is responsible for it. In this way, OHS is reinforced as a matter of self-supervision and individual responsibility.

5.3 Social Relevance

The Workplace Safety 3220 curriculum's technical and quantitative approach to presenting knowledge is useful in effectively categorizing, identifying and defining OHS concepts and ideas

that workers should know about their workplaces. However, this technical and quantitative approach has limitations that are worth revealing within an OHS curriculum. The Workplace Safety 3220 curriculum's use of such language to place primary focus on physical injuries and accidents, and marginalization of diseases and illnesses reflect a bias toward OHS knowledge on occupational incidents that are easily compensable by the workers' compensation system. It reflects how the curriculum steers away from ambiguity, alternative meanings and maintains a focus on objectified knowledge presented in technical and quantitative forms. These patterns reflect a number of factors. Firstly, the fact that the course materials from a post-secondary safety-engineering course was used during the development of the curriculum becomes apparent from the content of the course materials. The content of the Workplace Safety 3220 curriculum reflects the technical nature of the safety-engineering course, replicates the types of knowledge that are included and excluded from it, and the biases, assumptions and omissions produced about what is risk, who are at risk and ways to manage risk.

Secondly, the curriculum reflects workers' compensation data that frequently suggests that occupational accidents and injuries occur at a significantly higher rate as compared to occupational diseases. For instance in her 1992 study on blue-collar workers in Québec, Karen Messing (1998) and her co-authors found that "...there are about 10 times more accidents [compensated for] than industrial diseases" (15). An analysis of the workers' compensation data between 2001 and 2008 January for Newfoundland youth suggests a similar pattern. There were 2567 youth injuries as compared to 19 diseases that resulted in compensation claims, for either lost time or medical aid, in those seven years. Messing and other OHS researchers explain that these patterns revealed by the technical and decontextualized data from workers' compensation claims do not necessarily reveal the lived actualities of the workers. Messing suggests that

workers' compensation data often indicate a higher rate of injuries than diseases, not necessarily because injuries occur at a higher rate, but "because it is easier to relate an injury to the workplace than an illness" (1998, 15). For example, when a person falls off the ladder at the job site and breaks their leg, it can be easily identified as an occupational injury; in comparison, a back-ache problem that occurs over a long period can be more difficult to relate to the job. Moreover, the statistics generated from compensation claims data only reflect the successful claims. In addition, youth working in informal employment situations (such as in family farming or fishing businesses) often find it difficult to identify and establish the work-relatedness of their injuries and illnesses (Centers for Disease Control and Prevention, 1997).

Thirdly, the absence of material on mental health within the Workplace Safety 3220 curriculum also reflects the treatment of mental health in the Occupational Health and Safety Act and in the workers' compensation regulatory system (Greenslade, 2008). The provincial health and safety act does not mention anything in relation to mental health, workplace aggression, threats, violence or work-life balance. In addition, mental health problems are very rarely covered by workers' compensation. Among the list of 271 "nature of injuries" for which WHSCC compensates a worker, only four are related to mental health (Codner, 2008b). In other words, occupational incidents that are not easily identified, categorized and compensated for are marginalized in the Workplace Safety 3220 curriculum. This is problematic because these issues are particularly important to youth, given that many youth simultaneously go to school, hold jobs, and maintain social lives, which can contribute to their mental health (Barling, 1995). Moreover, literature suggests that youth often experience a higher rate of occupational violence in the form of verbal abuse, threats, and assaults (Mayhew & Quinlan, 2002, 261).

The focus in the Workplace Safety 3220 curriculum on using technical discourses to conceptualize key terms, describe standardized prevention or emergency procedures, and reporting OHS trends offers an important lens through which to understand OHS. The objectified knowledge in the curriculum can effectively convey OHS knowledge that can be applicable in many different scenarios. However, this objectified knowledge strips away critical knowledge about the lived actualities of the workers from the surface of the textual material. It also silences a wider range of workplace OHS issues that are not easily standardized, objectified or quantifiable, such as illness and disease, workplace violence and work/life balance. The tendency to present OHS knowledge as technical and quantifiable shifts the focus away from the social contexts and relations within which individuals must mitigate risks and work safely, and towards the identification and management of risks through a fixed set of technological and individual interventions. This use of objectified knowledge reinforces the culture of individualized OHS where the workers are informed about the technical knowledge on rules and regulations, and are expected to take responsibility of their own health and safety. At the same time it removes all signs of the relations of ruling that characterize the social contexts from which this objectified knowledge is extracted. The following chapter places a specific focus on the ideology of individualization of OHS reflected in the Workplace Safety 3220 curriculum.

Chapter 6 Identification of the Young Worker as a Problem

The growing literature, research and government initiatives towards the management of youth OHS, and specifically the reduction of youth injuries, predominantly focus on OHS education and training as two of the primary intervention strategies. These education and training programs often reflect assumptions about the nature of risk, health and safety, and the overall management of workplace health and safety. These are prevention mechanisms utilized with the understanding that they will prevent possible injuries, lower the rate of accidents and injuries, and foster a positive health and safety culture among young workers (for example, see Canada Safety Council, 1998; Gaspers, 2005; Lerman et al, 1998; and Linker et al, 2005). There are numerous other OHS management mechanisms that can contribute to the reduction of accidents and injuries and the development of a health and safety culture in the workplace. Among others, these mechanisms include regular health and safety inspections, the education and training of employers and management authorities, enforcement of OHS laws and regulations, and establishment of proper accident and injury investigation, reporting and responses (Kosny, 2005). A primary focus on just one or a few of these mechanisms inevitably undermines the other ways to address the issue of youth accidents and injuries. It also fails to address all the other factors that contribute to the high rates of accidents and injuries among young workers.

In this chapter I explore the ways in which the Workplace Safety 3220 curriculum reflects the ideology of individualization of OHS which in turn contributes to the curriculum's legitimization of OHS education as a key strategy in dealing with youth occupational injuries and accidents. Using evidence from the official and the delivered curriculum of the Workplace Safety

3220 course, I demonstrate that the curriculum labels young workers' *youth* as one of the key problems that contribute to their occupational accidents and injuries. I also demonstrate that the curriculum places an overemphasis on promoting a culture of injury prevention specifically among young workers. I argue that while the prevention of injuries is the most desirable outcome, the assumptions about young workers' youth as the problem and that the promotion of a culture of prevention can solve the issue of occupational injuries among youth fail to take into account various external factors that affect OHS practices among young workers. They fail to present a more holistic approach to OHS management which takes into account both worker and job related factors that shape OHS practices and experiences. The following sections draw on research findings from the official curriculum and the delivered curriculum in the classroom to demonstrate the assumptions embedded within it. The implications of each of these assumptions are also discussed.

6.1 Youth don't know any better

It is critical for a worker to be well aware of OHS regulations and safe practices in order to make informed decisions about health and safety in the workplace. When analyzing the construction of the concept of *youth* in the official Workplace Safety 3220 curriculum and its delivery in the classroom, it became evident that the textbook, curriculum guide, OHS video, and classroom discussions all assumed that young workers are not particularly aware that they have OHS rights and responsibilities in the workplace, and are not fully aware of the types of rights and responsibilities they have. The curriculum further assumes that this deficiency in OHS knowledge is one of the primary causes of the high rate of occupational injuries and fatalities

among young workers. It concludes that making young workers more aware of their OHS rights and responsibilities will directly result in reduced OHS incidents. By establishing youth's lack of OHS knowledge as a 'fact,' the curriculum essentially legitimizes the idea that the best way to address the problem of workplace injuries among young workers is to offer OHS education.

These assumptions about youth's lack of OHS knowledge and about the related high risk of getting hurt on the job are found throughout the curriculum. For instance, the curriculum-associated video entitled *Things You'd Better Know* observes that "[a]ccording to Federal Statistics, one-third of all workplace injuries in Canada occur to young workers. One of the best ways to lower this is through education – helping you to recognize the hazards on any job, and watching this video program may be the first step to that." The instructors' guide introduces the Workplace Safety 3220 course by commenting that, "for many students this will be their first experience with Occupational Health and Safety" (16). The textbook makes a similar comment suggesting that, "most young people know very little about what happens if a person is injured at work" (43). In chapter 1.3 on OHS legislation in the textbook, one of the objectives of the chapter is described as to "decrease the number of young Canadian workers who are injured and killed on the job because of their lack of OH&S awareness" (21). The first chapter of the textbook makes a similar but firmer observation that "[i]njuries and deaths among young workers will not be prevented or reduced unless you [youth] know your [their] rights and responsibilities in the workplace" (7). The OHS video reaffirms these assumptions by suggesting that young workers often fail to recognize occupational hazards, that they are more vulnerable, and that they need OHS education to address their OHS management. Interviews with course instructors also demonstrate a consensus that youth are often unaware of their OHS rights and responsibilities. For instance, CoI 3R believed that his students were unaware of their right to

refuse unsafe work, the right to be trained in the workplace, and that the Workplace Safety 3220 course was useful in raising their awareness.

These comments and observations draw on the assumption that young workers do not necessarily know about their rights and responsibilities to inquire about their OHS and are unaware of how to manage the risk of injuries at work. As the literature review has shown, there is much support for this assumption. Young workers are often poorly trained in how to perform well in their jobs and unaware of their OHS rights and responsibilities (Lavack, 2008 and West et al., 2005). Nevertheless, a curriculum that has been primarily based on this premise fails to acknowledge other critical factors that shape young workers' OHS experiences. This exclusion of external factors contributing to youth's OHS experiences is problematic. The discussion at the end of this chapter demonstrates that youth are not necessarily always ignorant about their OHS rights and responsibilities, and that they often continue to work in unsafe work environments and perform tasks in unsafe ways even when they know their rights due to numerous interlinked socio-economic factors (some of these factors are elaborated on in chapter 7).

6.2 Youth feel that they are invincible

In conjunction with the assumption that young workers are unaware of their OHS rights and responsibilities, the Workplace Safety 3220 curriculum also reflects the assumption that youth demonstrate a sense of invincibility when dealing with workplace hazards and other risky activities. The textbook and the curriculum guide suggest that despite the fact that statistical data demonstrate an alarming rate of occupational injuries and fatalities among young workers, they continue to maintain this attitude of invincibility. This makes youth more inclined to take risky

actions and more prone to accidents and injuries. The introductory chapter of the textbook states: "[e]very year an alarming number of young people are injured or die as the result of work-related injuries. You may think you are invincible. But the numbers tell a very different story" (7). The curriculum guide observes, "students at high school age exhibit a feeling of 'invincibility' and consider safety training in their personal lives to be unnecessary" (172). The textbook suggests that this attitude of invincibility among youth is not limited to work environments only. Drawing on youth psychology discourses (for example, see Benthin, Slovic, & Severson, 1993; and Irwin, Igra, Eyre & Millstein, 1997), the textbook notes that young people demonstrate such propensity to risk-taking behaviour in most decisions in their personal lives. For instance in the chapter on *Drugs in the Workplace*, it is suggested that young people with drug dependency justify their habit by saying "My friends do it" "Drugs are fun" or "Everybody's doing it" (233).

The video entitled *Things You'd Better Know* corroborates the official curriculum in the textbook and curriculum guide. The video makes reference to ideas such as youth are more vulnerable as compared to older workers, they are more reluctant to ask questions about their OHS and that they demonstrate a sense of invincibility. For instance, the video shows the father of a young worker who died on the job describing young workers in the following way: "when we're talking about kids who are 18 or 19 years of age, 14-15, everyone in that age group thinks they are invincible. And if there's anyone who had a proper claim to that kind of a thing, was a big healthy strapping guy like this."

Instructor interviews also reflected similar beliefs. One instructor remarked, "You know the attitude of younger people is like the safety is not the utmost in their minds, is it? ...They're invincible and this kind of stuff." The assumption is that young people take unnecessary risks for the sake of their curiosity. For example, after watching a video on fire prevention, which briefly

described the reaction of an undisclosed chemical reaction, CoI 7R commented to students, "you'd probably try that reaction to start a fire, if they mentioned what the two chemicals are (laugh)." Often the instructors used examples from their own youth to demonstrate young people's risk taking behaviours. For example, when teaching electrical safety, the substitute instructor in CoI 7R's class commented, "[w]hen I was a kid... we used to take eight volt batteries and touch it in our tongue." Even though the instructors also provided examples of their current risk taking behaviours, those behaviours were not constructed in relation to their age. CoI 7R admitted that even though he should, he did not turn off the electrical breaker at his home when he changed the light bulbs. However, unlike in the case of his young students, his risk taking behaviour was not associated with his age.

The above examination of the curriculum demonstrates the assumptions embedded within the curriculum on the nature of youth, and their behaviour. Once again these assumptions legitimize the promotion of OHS education as a critical element in creating and fostering "a positive attitude toward OH&S in the workplace" (Workplace Safety 3220, 21) and in turn contribute to the reduction of workplace incidents among youth. While youth's attitude of invincibility and their propensity to pursue risk taking behaviours are well documented in some areas of scholarly research, the curriculum's over-emphasis on youth psychology to explain the high rates of occupational incidences among young workers is problematic. The Workplace Safety 3220 curriculum categorizes youth as 'at risk' of undertaking hazardous activities at work and at home. It describes youth as feeling 'invincible,' 'vulnerable,' and 'reluctant to ask questions' about their OHS rights and responsibilities, but omits the possible underlying reasons for such feelings. It reflects a rhetorical organization of statistics (or lack thereof) to place a unitary focus on the severity of the problem of youth occupational injury ("[e]very year an

alarming number of young people are injured or die as the result of work-related injuries. You may think you are invincible. But the numbers tell a very different story"). It does not use statistical representations from the body of scholarly literature that identify and illustrate the complex social contexts that contribute to young people's work experience. For example, labour market statistics indicates the availability of jobs in the community, which in turn can contribute to fear of job loss among young workers. This literature demonstrates that often young workers, despite their OHS knowledge, continue to undertake unsafe work practices as they are constrained by these external factors. The discussion at the end of this chapter elaborates on some of these structural and socio-economic factors that often contribute to youth's unsafe work practices and/or their occupational accidents and injuries.

6.3 OHS management is the responsibility of the individual worker

The ways in which the official Workplace Safety 3220 curriculum constructs the concepts of *youth*, *health* and *safety* are predominantly reflective of the dominant discourses that focus on the psychological and physiological examination of individuals and their behaviour. The textbook reflects a language that intends to develop a health and safety culture that encourages individual workers to engage in self-supervision and self-regulation aimed at prevention as the primary method of OHS management. Young workers are expected to know about their OHS rights and responsibilities, associated policies and regulations, seek further information from authorities (rather than wait for instructions), and foster a sense of individual responsibility in dealing with OHS. Individual responsibility is a critical component of the internal responsibility system and in the overall maintenance of workplace health and safety on a day-to-day basis. It is imperative to

convey knowledge about individual responsibility in an OHS curriculum. However, employees should also be aware of the responsibilities of the employers and the bureaucratic governing bodies that shape their OHS experiences. This awareness of employers' responsibilities is critical for the workers to fully understand and enforce their OHS rights. In other words, workers need to know about the responsibilities of the employers and other OHS governing bodies so that they know what they can expect from their employers in terms of maintaining workplace health and safety. The present research revealed that although the Workplace Safety 3220 official curriculum mentions the responsibility of the employers and other authorities, it de-emphasizes those responsibilities as it emphasizes the responsibility of the individual worker.

The content of the curriculum is constructed specifically to address the individual worker (as opposed to groups of workers, worker organizations, or employers), emphasizing individual responsibility to be knowledgeable about the OHS rules and regulations. An examination of the topics presented in the textbook demonstrates this pattern. Among the 23 chapters in the textbook, only two focus on the responsibilities of the employer, the compensation board and the OHS committees and representatives. Even when these organized structures are discussed, the scope of the discussion is limited to the procedures and rules that guide individual workers in participating or seeking assistance from these groups. Because the OHS responsibilities are reduced to the level of the individual worker, this ultimately has the potential to imply that personal OHS training ensures the worker's health and safety in its entirety.

Furthermore, a content analysis of the textbook reveals that even though it mentions and discusses employers' OHS responsibilities just about the same number of times as workers' responsibilities, it often goes on to de-emphasize the employer's responsibilities and discourages workers from relying on their employers to ensure a safe work environment. The following

excerpt from the textbook demonstrates that even when the curriculum acknowledges the roles and responsibilities of the employer to meet the minimum health and safety standards, OHS management is largely depicted as a matter of individual training of the worker:

> [a]lthough employers are required under the legislation to provide a healthy and safe workplace, not all have educated themselves in aspects of occupational health and safety (OH&S). Therefore, you cannot always depend on the employer or supervisor to keep you safe. This is why you must know your rights… Once you realize these rights, you can actively take responsibility for working safely, asking questions and requesting training to keep yourself safe while at work (7).

The curriculum guide reinforces the same idea specifically for the instructors by suggesting that "[s]tudents need to know they have the right and the responsibility to ask questions about safety in the workplace. Students must know they cannot always depend on the employer or supervisor to keep them safe" (16). Although the two excerpts from the textbook and the curriculum guide attempt to present a realistic view of the relations between employers and employees, nevertheless they give the impression that employers should not rely on their employers and hold them legally accountable for the minimum health and safety standards to be maintained in the workplace. Moreover, the curriculum fails to outline the employers' responsibilities, and the consequences of not fulfilling their OHS responsibilities, as laid out by the Occupational Health and Safety Act (Government of Newfoundland and Labrador, 2009). For example, when discussing workplace inspections in chapter 2.2 in the Workplace Safety 3220 textbook, the author notes that, "[t]he Canada Labour Code and the Occupational Health and Safety Regulations states that it's every employers' duty to protect the health and safety of every

employee while at work" (68). In the remaining of the chapter the authors present a list of steps to follow to conduct workplace inspections. It does not discuss the legal ramifications of not conducting or reporting on workplace inspections, or what actions workers can take in case management does not carry out workplace inspections properly.

Interviews with the instructors reflect how the delivered curriculum reinforces the importance of establishing the rights and responsibilities of the individual worker. Most of the instructors implied that youth needed to be responsible for their individual health and safety at work. For example, even though the textbook devotes about five pages to the concept of workers' and employers' due diligence, one of the interviewed instructors (CoI 10R) suggested that it should place more emphasis on due diligence on the part of the employee to ensure that students learn to take responsibility for their actions in the workplace. Classroom observations also reveal that instructors reinforced the idea that maintaining safety on the job is a matter of individual training and individual responsibility on the part of the young workers. The following classroom discussion between the instructor and a young male student who works in a fishing boat is an example of the practice of individualization of responsibility for OHS:

> Student: Sure we goes in the holds of ships (referring to the textbook's list of examples of Confined Spaces, including *holds of ships*). Nine out of ten times there's no lights, cod floating. One day I worked for 26 hours and we had to wrap individual fingers to keep them dry inside the gloves. We use plastic wraps and wrap our arms to keep dry....We don't even use hard hats anymore...In the boat deck we don't stand, there's no grip. People falling all the time.
>
> Instructor: You should be protecting yourself because you don't have the insurance and you're the only one who can save yourself.

The excerpt above makes it clear that the young worker is well aware of his unsafe work practices and that these practices are common among the other workers on this fishing boat. It also implies a number of possible factors, other than young workers' lack of OHS knowledge and their sense of invincibility, which may be contributing to such behaviour. For example, the hold of the ship is often missing proper lighting and the deck does not have adequate safety grips to prevent accidents. Even though the textbook suggests that it is the responsibility of the employer to ensure that the work environment is safe, the official curriculum and the delivered curriculum in the classroom caution the young worker that ultimately it is their individual responsibility to ensure that they avoid getting hurt on the job. Moreover, the instructor does not note the role of the workers' compensation system in compensating workers for work injuries.

6.4 Developing a culture of prevention is critical in OHS management among youth

The curriculum guide for the Workplace Safety 3220 course begins with the following statements in the first chapter:

> How can we prevent accidents before they happen? Firstly, people need to develop a healthy attitude towards safety in their non-work lifestyle so that safety becomes second nature to them in the workplace. This issue can be most effectively addressed through the education of our youth - in a workplace safety course (1).

Similarly, the curriculum's associated video, "Things You'd Better Know...To Work Smart, Work Safe" also advocates OHS education as an important strategy to reduce workplace injuries among young workers. It uses multiple real life examples of young workers who have experienced serious or fatal injuries on the job as a way to demonstrate the need for OHS knowledge[15]. Interestingly, each of these examples reveals negligence on the part of the employer as the primary cause of the injuries experienced. Nevertheless, the video uses these graphic examples of serious injuries and fatalities to justify, legitimize and promote the idea that one of the best ways to lower workplace injuries among youth is through OHS education targeted at youth. The video reflects an increasing trend within workers' compensation boards to utilize social marketing techniques, among other tools, in promoting OHS education among youth as a critical strategy in managing youth OHS (Lavack, 2008, 14). These social marketing campaigns use 'fear appeal' by using pictures of healthy young people juxtaposed with their pictures in wheelchairs or crutches or in the morgue after serious accidents (6). These campaigns are aimed to create OHS awareness among youth and to instill a culture of injury prevention.

The two examples above reflect a number of critical assumptions on which the official curriculum is based. They reflect an assumption that OHS education for youth is one of the most effective ways to address occupational accidents among them. In addition, it highlights prevention as the primary mechanism for managing workplace health and safety. It is apparent that the Workplace Safety 3220 curriculum relies heavily on discourses that advocate prevention of accidents by the individual worker. The curriculum places an over-emphasis on the promotion of individual safety and prevention, and does not adequately address issues such as the maintenance of a prevention culture among management, and the process of recovery from

[15] The stories of David Ellis, Marco, and Sean Kells.

injuries and illnesses. Moreover, it is completely silent on issues such as workplace violence, aggression and workers' mental health. These issues are particularly important to youth because they tend to experience a higher rate of occupational violence as compared to adults due to the precarious nature of the types of jobs they typically do (Mayhew & Quinlan, 2002, 261). It is important to promote OHS education, injury prevention and a culture of individual safety in the workplace. However, promoting an OHS culture that primarily focuses on individual prevention and safety specifically among workers silences numerous other factors that are important to OHS management in the workplace, including proper responses to occupational injuries and illnesses, and other workplace issues that do not necessarily contribute to injuries but still affect OHS and workers' wellbeing.

A content analysis of the Workplace Safety 3220 curriculum and interviews with the instructors reveal that the official and the delivered curriculum place significantly greater emphasis on individual workplace safety, prevention and protection than on health, and on recovery from accidents, injuries and illnesses. In other words, the curriculum's primary focus is on avoiding and preventing accidents and injuries. It omits knowledge on how to deal with occupational injuries and accidents once they have occurred. This is reflective of the growing emphasis on establishing proactive OHS mechanisms to prevent injuries and accidents as oppose to reactive mechanisms to deal with accidents and injuries after they occur (European Agency for Safety and Health at Work, 2004; Canada News Centre, 2007; and McCloskey, 2008). While it is necessary to instil a culture of safety and prevention among individual workers so as to prevent injuries and accidents before they even occur, it is just as important to promote a culture of prevention at the organizational and structural levels (among employers, management, government etc.). Moreover, it is important for the curriculum to present a balanced approach to

OHS management – an approach that adequately addresses issues that occur before, during and after an injury or accident happens.

An in-depth content analysis on the concept of safety as represented in the Workplace Safety 3220 curriculum shows that it primarily focuses on maintaining workplace safety, employees' responsibilities toward workplace safety, safety measures to prevent injury, and employers' responsibilities toward safety (see table 5 for details). The promotion of safety, prevention of occupational incidences, and protection from risks and hazards among any group of workers can be an important and effective strategy to manage OHS. However, a curriculum focusing mostly on safety and not adequately addressing the issues of dealing with occupational incidents at work only reflects a partial management of OHS.

Table 5: Frequency of OHS Related Terms in the Workplace Safety 3220 Curriculum. *Source: Workplace Safety 3220 (2008).*

	Student Manual		Curriculum Guide		Total
	Frequency (*f*)	**Every 10 pages (μ)[1]**	**Frequency (*f*)**	**Every 10 pages (μ)[2]**	**Frequency (*f*)**
Safe/safety/Unsafe	505	19.27	437	19.51	942
Hazard/hazardous	306	11.68	308	13.75	614
Protection/protective	300	11.45	138	6.16	438
Injured/injury/injuries	257	9.81	152	6.79	409
Health/Unhealthy	235	8.97	213	9.51	448
Accident/Accidents	172	6.56	105	4.69	277
Prevention/preventive	108	4.12	46	2.05	154
Risk/risky	86	3.28	79	3.53	165
Death/die/lost life/kill	37	1.41	8	0.04	45
Illness	28	1.07	12	0.54	40
Disease	27	1.03	6	0.27	33

1 Excluding the empty pages, table of contents, and the title page for each chapter, the Workplace Safety 3220 textbook consists of 262 pages.
2 Excluding the title page of each chapter, and table of contents, the Workplace Safety 3220 curriculum guide consists of 224 pages.

The content analysis data demonstrate that the concepts of *hazard* and *risk* as reflected in the Workplace Safety 3220 curriculum reveal this very bias toward prevention. When the textbook discusses various types of hazards and risks such as electrical and chemical hazards, the control mechanisms for each kind of hazard and risk is limited to preventative actions. These lists of hazard control strategies do not discuss how workers who are already exposed to these hazards can be treated, where they can seek help and how they can manage their overall OHS. Similarly, the curriculum constructs the idea of workplace accidents predominantly in relation to prevention programs and their related prevention mechanisms. For example, the textbook suggests that "the focus of any safety program should be the prevention of accidents before they occur" (16), and regular workplace inspection is an integral component of a prevention program (70). Even though prevention requires changes at individual, organizational, and societal levels, the curriculum places the most attention toward the prevention culture of the individual worker. It does not adequately emphasize on the need for a culture of prevention among management and employers. The textual curriculum is further problematic in that even though the curriculum discusses the employer's responsibility toward prevention when it discusses the importance of accident investigation and reporting, and the strategies that can be used to conduct them to prevent future incidences, it remains silent about the responsibilities of the employer once a worker gets injured at work.

When the curriculum does explore the concepts of health, illness and injuries, it demonstrates a distinct pattern where the primary focus is on individual prevention and protection from injuries, illnesses and diseases. The results from the content analysis reveal this pattern. The words illnesses and diseases are used in relation to prevention at least 58% of the times in the textbook. Similarly, the word injury is used primarily when the curriculum discusses

prevention of injuries (at least 32% of the times). The rest of the times the word injury is used in relation to the different risk factors, workers' and employers' rights and responsibilities toward injuries, laws and policies related to injury at work. Very little focus is placed on workers' experience of workplace injuries, illnesses and diseases and how those experiences can be affected by workplace relations, and various socio-economic factors. Classroom observations reveal a similar pattern. Even when the classroom discussions sometimes explored the actual experiences of workplace injuries, these discussions repeated and reinforced the fundamental premise developed in the official curriculum – that of assuming individual responsibility for OHS awareness and internalizing a culture of precaution, prevention and safety. As the example in the previous section demonstrates, after a young male student described the hazards, unsafe work practices and accidents in the fishing boat where he worked, the instructor cautioned the student by suggesting that he is responsible for his own safety and health. The instructor did not explain the responsibilities of the employer in ensuring a safe work environment, nor did he explain the employer's rights to demand such environment from the employer.

6.5 Social Relevance

Recent research on OHS has focused on "the health behaviours of specific populations", identifying and labeling groups or populations as "at risk," "high risk," or "risk taking." Youth have predominantly been labeled as such, and research on their OHS has disproportionately focused on the high occupational incidents among youth and the assumed need for OHS education and training programs targeted at youth as a part of the prevention mechanism (Allender et al, 2006; Breslin & Smith, 2006; Breslin et al, 2007 and Kosny, 2005). An analysis

of the Workplace Safety 3220 curriculum and its delivery in the classroom revealed that they reflect these assumptions about youth's OHS experience. The curriculum is built upon the assumption that occupational incidents and workplace health and safety in general are caused, experienced and controlled at the individual level. The curriculum also assumes that young workers are not well aware of their OHS rights and responsibilities, and that they demonstrate an attitude of invincibility. Finally, the OHS knowledge in the Workplace Safety 3220 curriculum is framed within the discourses of individual-based prevention, protection and safety, neglecting the knowledge on the actual experience of occupational injuries and other incidences at work.

Ensuring worker's OHS knowledge, an OHS culture of prevention, and the promotion of individual responsibility are critical steps toward reducing young workers' occupational injuries and other incidences. However, when a curriculum is almost exclusively based on these premises, it over-emphasizes worker-related individual factors and silences complex and interlinked job-related factors and other social factors that also contribute to occupational incidents and the overall OHS experience. This silencing of the social factors and promotion of an individualized OHS culture entail a number of issues. Firstly, it is apparent that the developers of the course, including the government of NL, the NL Employer's Council and the WHSCC, have responded to the official statistics that indicate that young workers have a higher rate of occupational injuries as compared to their adult counterparts (WHSCC, 2002 & CuD 2). The introduction of the course was in response to workers' compensation data, and many other research results that identify youth as a high-risk group. Even though many recent studies are contesting such findings and are suggesting that it is a worker's lack of experience and training which leads to higher occupational injuries, rather than their age. Breslin et al. (2003)

demonstrate through their research that the workers' tenure on the job can explain their chances of injuries better than their age.

Secondly, the curriculum makes a number of assumptions about youth which have the potential to shape the identity of youth, and label 'youth' as the problem. These assumptions, including youth's lack of OHS knowledge, tend to justify and legitimize the Workplace Safety 3220 course as a reasonable part of an OHS youth management strategy. The organizers of the course introduced this initiative as part of their prevention programs, with the aim of reducing occupational injuries (WHSCC, 2002). In 2002 the WHSCC released a report titled, Promoting Safe and Healthy Workplaces: A Provincial Strategy - A four-year plan 2003-2006, which explains that it was facing an imminent financial crisis due to significant increases in different rates of injury claims and this report was designed to plan for significant reductions in these payouts. It explained, "it was projected that the Commission would experience a cash flow shortfall of $9.7 million in 2001, and a $30.1 million shortfall in 2005. The viability of the system was uncertain and something had to be done or the Commission's injury fund would be wiped out within 15 years" (6). Among other initiatives to reduce compensation claims, the report identifies one initiative targeted directly at youth, that is to promote OHS education among young workers.

The intertextuality between this report and the Workplace Safety 3220 curriculum reveals the existence of an underlying power relation between young vulnerable workers and the organizational structures that in many ways shape the workers' OHS experiences. Firstly, the organizational and operational structure of WHSCC leads to the prioritization of financial stability of the organization over workers' safety. Secondly the focus on individualized OHS results in shifting the responsibility for workers' OHS away from the employer and the

government and on to the individual workers. For example, it shifts the focus away from the employer's responsibility to ensure safe work environment and the government's responsibility of enforcing OHS acts and regulations and places the focus on the young worker's responsibility to ensure his/her own safety one the job. As one of the curriculum developers explained, "the goal was in the long term to keep people safer at work and to prevent injuries, not to have to deal with disability management but to prevent them before they start." Her comment reflects the course's focus on establishing a culture of individualized prevention as the primary goal.

Taking a broader look at the current OHS management system as a whole in Canada, Kosny (2005) argues that despite the roles of the health and safety related acts and their enforcement by the government, the OHS system is heavily reliant on self-reliance, self-supervision and self-governance on the part of the employer and the employee. She argues that within this system OHS is "meant to be negotiated, within the workforce, between these two parties" through the use of joint health and safety committees and other programs that promote internal responsibility. Kosny argues that this form of OHS management reflects a neo-liberal ideology that suggests that individuals are responsible for their personal wellbeing, that they should not rely "passively on the state for the protection of health." Both Kosny and Gray (2002) note that by promoting a framework of OHS management focused on employers and employees the government aims to reduce its intervention and supervision and creates a gap in the official information on how workplace health and safety is actually experienced in the workplace.

Chapter 7 An Absence of Social Context

The knowledge on workplace health and safety directly and indirectly reflects numerous socio-economic factors that shape workers' OHS experience and in turn the knowledge itself. This study examined how concepts such as social class, youth, gender, and geographic location (rural and urban) are represented within the official and delivered curriculum of the Workplace Safety 3220 course. An examination of the official curriculum reveals that for the most part, the course almost never acknowledges these factors directly. However, these concepts are embedded in the curriculum in indirect ways. The research reveals that by focusing on certain types of OHS knowledge, the curriculum presents a body of knowledge that is primarily focused on male blue-collar, working class workers based primarily in urban, industrialized centres. In this way the curriculum reflects latent assumptions about the types of workers most likely to face occupational risks, the types of risks they face, and appropriate ways to manage those risks. In making these assumptions, the curriculum omits OHS knowledge and issues specific to white collar and pink-collar occupations including in many jobs typically held by youth. The curriculum also marginalizes OHS knowledge about occupations primarily based in rural, non-industrialized areas.

By focusing on one specific type of OHS knowledge, the curriculum presents a discrete, manageable and objectified knowledge that portrays a cumulative and unilateral knowledge on OHS. This knowledge leaves little room for multiple or alternative interpretations and understandings of OHS including in particular the relationship between wider social contexts and the risk of injury, disease and fatality at work. I argue that the Workplace Safety 3220 curriculum

reflects dominant OHS discourses, particularly the workers' compensation claims data, which demonstrate a high level of occupational incidents among male blue-collar workers. It also reflects recent government policies that are promoting the advancement of skilled trades in Newfoundland and Labrador. While the Workplace Safety 3220 curriculum is useful in conveying information on OHS rules and regulations pertaining to urban, industrial, blue-collar occupations, it is problematic in that it marginalizes the OHS knowledge pertinent to young workers, women workers, and workers from non-industrialized and rural communities in the province. This organization of the OHS knowledge reflects the power relations and power struggles that dictate the formation of knowledge and OHS experiences in the workplace. In particular, it reflects the influence bureaucracies maintain in the development of a curriculum and in shaping worker's OHS management.

7.1 Assumptions and omissions

A content analysis of the official curriculum demonstrates that the focus of the Workplace Safety 3220 course is primarily on male dominated blue-collar occupations. This pattern is particularly notable when the textbook discusses the hazards associated with particular jobs and occupations, and the ways to reduce those associated risks and hazards. As Table 6 demonstrates, the top five occupations and their associated hazards discussed in the official curriculum include: construction work, mining, electrical, manufacturing and clerical. The focus on male dominated occupations can be observed when this list is compared with the list of the top five male-dominated occupations in Canada, which includes pipefitters, electricians, construction workers, industrial mechanics, and refrigeration and air conditioning mechanics

(Catalyst, 2010, 4). In contrast, the top five female dominated jobs in Canada are: secretaries, nurses, child care and home support workers, support workers in health services, and social services workers and teachers (Catalyst, 2010, 6). Clerical work is the only female dominated occupation mentioned twice in the curriculum in relation to their associated hazards at work.

Table 6 Frequency of References to Types of Occupations Mentioned in Workplace Safety 3220 Textbook. *Source: Workplace Safety 3220 (2008).*

Help to reduce hazard[1]	**Associated hazards**[2]	**Legislation and policies**[3]
Supervisor (*f* 36)	Construction worker (*f* 11)	Executive or owner (*f* 10)
Medical personnel (*f* 18)	Miner (*f* 10)	Contractor (*f* 4), Director (*f* 4)
Ergonomist (*f* 16)	Electrician (*f* 4)	Cleaner (*f* 2), Computer Programmer (*f* 2)
Manager (*f* 15)	Manufacturing worker (*f* 4)	Police (*f* 2), Sales person (*f* 2)
Engineer (*f* 11)	Clerk (*f* 2)	Accounting Clerk (*f* 1), Manufacturing worker (*f* 1), OHS advisor (*f* 1), Secretary (*f* 1), Service provider (*f* 1), Drug trafficking worker (*f* 1)
Hygienist (*f* 10)	Astronaut (*f* 1), Athlete (*f* 1), Carpenter (*f* 1), Data entry clerk (*f* 1), Fire Fighter (*f* 1), Fish harvester (*f* 1), Laboratory worker (*f* 1), Logger (*f* 1), Manager (*f* 1), Oil and gas worker (*f* 1), Painter (*f* 1), Police (*f* 1), Asbestos remover (*f* 1), Sales person (*f* 1), Security guard (*f* 1), Service provider (*f* 1), Shipbuilding (*f* 1), Tree trimming worker (*f* 1)	
Occupational therapist (*f* 9)		
Nurse (*f* 7)		
Kinesiologist (*f* 5)		
Electrician (*f* 2)		
Chemist (*f* 1), Fire Fighter (*f* 1)		

[1] These occupations were mentioned in relation to their expertise in helping others to reduce occupational hazards.

[2] These occupations were mentioned in relation to specific types of hazards, and hazard-controlling mechanisms.
[3] These occupations were mentioned in relation to the rules and regulations applicable to them or in relation to how they can enforce those rules and regulations.

Even when the textbook does not directly mention any occupation, it mostly represents the types of OHS knowledge that are most directly pertinent to male dominated blue-collar workers. For example, the curriculum identifies and focuses on the following list of hazards: chemical, fire, electrical, confined space, mechanical, hearing and ergonomic hazards. While these hazards can be associated with numerous occupations, they can be predominantly associated with blue-collar occupations such as fire-fighting, construction work, manufacturing work, electrical work

When discussing occupational incidents such as fatalities and injuries associated with these occupational hazards, the Workplace Safety 3220 curriculum once again focuses on blue-collar occupations and their associated incidents. For example, it mentions accidents in confined spaces, construction sites (fall from height), and manufacturing and industrial processes (break in chemical line releasing toxic material, and malfunctioning of machineries with blades). Other types of injuries that are commonly experienced by young workers in specific youth dominated jobs are only mentioned in passing, without relating them to those job environments. For example, the curriculum briefly discusses cutting and tearing, sheering, crushing, breaking, straining and spraining, and puncturing, but they are all conceptualized as types of Common Mechanical Injuries (171-172). Injuries such as cuts and tears can occur in non-mechanized work environments such as a knife used at a restaurant kitchen. The OHS knowledge presented in the objectified and deconxtualized list of mechanical injuries does not allow for alternative

interpretation and application of the concepts of cuts and tears to apply to other occupational injury cases. In a similar finding, it is revealed that the textual curriculum also repeatedly mentions burn injuries, either to describe life-threatening accidents or chemical burns. However, it does not relate burn injuries to the food service industry that employs many young workers (Breslin & Smith, 2005, 51). Similarly, when discussing chemical hazards and their associated accidents, the examples are exclusively drawn from the construction and manufacturing sectors dominated by male workers. None of the examples include occupations such as janitorial work, food processing, hair-styling, and other occupations that also deal with chemical hazards and where many young people are employed.

Interviews with the instructors and the curriculum developers revealed that even though most of them believed that OHS knowledge is important to all workers, they felt that the official Workplace Safety 3220 curriculum is primarily focused on skilled trades and blue collar workers. Most of them suggested that Workplace Safety 3220 was a relatively 'easy' course mainly targeted at low achieving academic students who were aiming to enter blue-collar occupations. The instructors described the targeted students as "students going into trades," "workers who are hands-on" "students who are about to enter the workforce," students "going into trades or community college," "middle of the road-students," and "non-academic students." One instructor (CoI 6U) commented that the course was "for people who'll work with their hands in some trade. For example, carpenter, plumber, construction worker. Not for doctors, engineers. They have OHS issues, but that's not who the course is meant for." Another instructor (CoI 4U) observed that the course was evidently geared toward trades because other than a few chapters on issues such as ergonomics, which related to computer-based work, "the vast majority

of [the curriculum] seems to be [focused on] trades." The instructors' perception can be summarized by noting CoI 7R's comment:

> Now with every workplace requiring OHS committees, the course is applicable to all. Originally it was mainly for skilled trades people. But OHS is now important. However this isn't reflected in the textbook, it remained the same all through – blue collar oriented. But now in society everyone is getting exposed to what blue-collar workers were exposed to all along.

The observations made by the instructors corroborate the study's findings that the Workplace Safety 3220 curriculum is mainly designed and constructed for male blue-collar workers.

In addition to the under-representation of youth and female-dominated occupations and their associated OHS knowledge, the Workplace Safety 3220 is problematic in its representation of *gender* and *youth* in general. The ideas of male versus female workers, and young versus adult workers, and how their OHS experience and OHS knowledge in various occupational sectors may be similar or different are never acknowledged. For example, the official curriculum does not acknowledge or discuss circumstances where a work setting may be designed for male workers or adult workers and young and female workers may have to learn to adjust or modify their work settings to perform their jobs safely (Messing, 1998). When the official curriculum does describe occupational incidents in various industrial sectors, the descriptions are devoid of any details on the types of workers (male or female, young or adult, etc.) who frequently experience these types of incidents. A brief examination of the textbook's chapter on *Sexual Harassment* demonstrates this practice. Although the chapter is thorough in its discussion on issues such as the laws related to sexual harassment, the rights and responsibilities of the employers and the employees, and the non-monetary costs of sexual harassment, it does not

address the structural context of sexual harassment. It makes no reference to systemic sexism or heterosexism, or to the social environments that contribute to the risk of sexual harassment such as vulnerable and precarious work (Mayhew & Chappell, 2001). This is of particular importance to young workers, since a majority of them work in precarious forms of jobs in the service sector (Lucas & Ralston, 1997) and are thus exposed to higher risks of sexual harassment and other forms of workplace abuse and violence than are other types of workers (Mayhew & Chappell, 2001). The *Sexual Harassment* chapter is not so much about the contexts that contribute to the actual experience of sexual harassment and its outcomes as it is about knowing the policies and regulations in place with regards to sexual harassment.

The official Workplace Safety 3220 curriculum is also silent about different occupations in rural versus urban areas and the OHS knowledge associated with them. The classroom delivery of the course rarely veered from the textbook to incorporate ideas on gender, social class and geographic location. Even when they are acknowledged in the classroom, very little is offered in the way of alternative OHS knowledge. By maintaining a focus on blue-collar occupations only, the curriculum indirectly ignores occupations based in rural communities, such as fishing, farming and boat building, and occupations in urban centres such as administration, health care and the service sector. Overall, these findings also imply that the curriculum reflects a body of knowledge primarily for the working class, ignoring the upper class and lower class of the workforce.

Classroom observations and instructor interviews revealed that this lack of social context in the Workplace Safety 3220 official curriculum is somewhat compensated for by classroom discussions. Even though these discussions were mostly guided by the textbook content, the instructors and students were at least able to engage in the knowledge construction process and

had the opportunity to deconstruct, question or reinforce the objectified knowledge presented in the official curriculum. Drawing on Chin's (2006) concept of authoritative and dialogic discourses constructed in the classroom, I suggest that the student-instructor discussions frequently produced dialogic discourses that are based on discussions, debates and challenges on OHS issues. For example, during classroom observations, CoI 7R asked students why Canada continued to show high rates of fire-related accidents despite its multiple safety mechanisms. The question triggered a discussion on possible causes for such a trend, including factors such as the abundance of flammable materials like forests, and individuals' carelessness. These types of discussions allowed students to conceptualize OHS beyond the objectified knowledge that mainly focuses on memorizing facts, rules and regulations and their applications and implications.

In addition to the omission of large segments of the workforce, the Workplace Safety 3220 curriculum also omits knowledge on the social contexts that influence young workers OHS experience and options. The curriculum presents knowledge in an objectified form that appears neutral and universally applicable and enforceable. There is little information on how social context mediates OHS options and outcomes for different young people in different contexts (for example, unionized versus nonunionized; seasonal versus year-round etc.). By remaining silent about ways social factors such as job security can shape one's OHS experiences, the curriculum can focus on the factors that are controlled by the individual workers. As I have explained in chapter 6, the assumptions regarding youth's lack the knowledge and proper attitude toward OHS pose a deterministic view of what causes youth injuries, which ignores other contributing factors that are not necessarily controlled by the individual worker. Among other factors it ignores age, gender, geographic locations (rural

and urban) and social class related factors that contribute to a power struggle, which may discourage youth to exercise their rights and responsibilities. When youth do raise issues about health and safety on the job, their concerns are often delegitimized or silenced. In his recent study Breslin (2007) found a gendered pattern in the ways in which young workers and employers negotiated OHS complaints and concerns. Employers tended to ignore complaints brought by young women. Young men, on the other hand, tended to remain silent about injuries (unless they were serious) and about poor OHS practices in order to conform to cultural ideas about masculinity. Young women working in male dominated jobs tended to remain silent as well in an effort to prove they were able to do their jobs as well as men.

Studies also show that workers who are employed in precarious jobs (like many youth) are often reluctant to refuse unsafe work or complain about safety issues in the workplace (Harcourt & Harcourt, 2000) to avoid being labeled as the problem worker, or being replaced altogether (Gray, 2002 and Breslin, 2003). Depending on the rural or urban context, and the availability of jobs in the community, and the fear of job-loss, a young worker may or may not feel comfortable with exercising their rights and responsibilities. The following discussion between the instructor and a male student in the rural classroom demonstrates the relevance of such complex power struggles:

Student: I cut my finger, it got sucked in, and I had to work the next day.

Instructor: No work-inspection in there obviously.

Student: Oh no!

Instructor: So what if you refused to work on the grounds of unsafe workplace?

Student: Well if you don't work, peace!

Instructor: They'll get someone else?

Student: Yes!

Instructor: So you're working in that kind of unsafe environment, do you say anything?

Do you see more now that you are doing these safety courses?

Student: Oh man, safety doesn't sound right anymore. They'll probably laugh at you if you said anything. There's unsafe stuff everywhere.

In this case, the young worker was a crew-member on a boat in a community heavily dependent on the fishery for employment. His comments suggest that refusing to work in an unsafe environment in a context of widespread unemployment was not an option he considered. They point to the unequal power relations between the employer and himself and to his lack of control over his job security and OHS practices. The exchange between the instructor and the student demonstrates that an attitude of invincibility or a lack of OHS education and training are not the only, or perhaps not even the most important, factors mediating OHS practices among young workers. It seems unlikely that a curriculum focused on changing the attitudes of individual youth alone will produce the desired outcome – a health and safety culture among young workers.

Similarly, a young worker's financial needs may also drive them to unsafe work practices. For example, when discussing safe work practices among youth, an instructor commented (CoI 3R), "Because as lot of kids they think, 'I'll get out and get a job and it doesn't matter as long as I'm making a few dollars.' It's the dollar symbol that's in front of them." Kosny (2005) suggests that given the choice between safety and financial or employment security, "safety often loses out."

The curriculum acknowledges these power relations at work between workers and employers only once by suggesting that, "In order to be sure workers are healthy and safe while at work, supervisors must provide an atmosphere in the workplace where workers are not afraid to bring OH&S issues to their attention" (27). This statement is not explored at any length in the

curriculum as part of the OHS knowledge. This under-representation of OHS knowledge on work relations is noted by only one of the ten instructors interviewed. CoI 5U suggested that the curriculum needs to directly address relationships between workers and employers, particularly in situations where workers need to raise OHS-related issues with their supervisors: "It's one thing to say it's okay to refuse work if it's not safe, but how do you go about refusing it without jeopardizing your job, or pissing off a supervisor or whatever?" While the readers of the Workplace Safety 3220 curriculum are given specific rules or guidelines about their rights and responsibilities, these rights and responsibilities are not situated within the social contexts where they are meant to be enforced. In other words, the curriculum remains silent about the actual experience of power relations at work and the knowledge on how to deal with them.

The few times the curriculum does acknowledge social and job-related factors that may contribute to the OHS experience including the risk of injury and fatality at work, it chooses to redirect the readers' attention to the factors located at the level of the individual worker. For example, in the chapter entitled *Accident Investigation and Reporting*, the textbook presents a list of job-related factors that can contribute to the risk of occupational accidents (121). But it does not explore all these factors to the same degree. For example, the curriculum pays particular attention to "ergonomic factors", "environmental factors",[16] "weakness in accident prevention programs", and the "employees' age." The list also mentions but fails to discuss factors including "untrained supervisors", "poor morale in the workplace", "shift work", "employee's experience" and "employee's home/social life."

[16] The textbook contains separate chapters for each of these factors contributing to OHS experiences.

7.2 Social Relevance

A discourse analysis of the Workplace Safety 3220 curriculum reveals that the official curriculum reflects a very specific focus on male blue-collar workers and their OHS issues, and remains silent about other types of workers and about the social contexts within which young workers experience work and OHS. Firstly, this representation of occupations leaves out young workers, white-collar and pink-collar occupations, various precarious jobs and jobs located in non-industrialized and rural areas. Secondly, it also omits knowledge about the work environment, the workplace relations and the general socio-economic environment within which young people work and mediate their workplace health and safety. While the official curriculum may be relevant to many youth who are currently working in blue collar occupations or will enter such jobs in their adult life, it does not reflect the OHS knowledge specific to the types of occupations where majority of the young people are currently involved.

These findings reflect a number of dominant discourses and government policy actions, particularly on workers' compensation claims and on employment in the skilled trades sector. Firstly, the official Workplace Safety 3220 curriculum's focus on male dominated blue-collar occupations reflects the pattern in official compensation claims statistics that indicate that for the most part women's jobs, and white collar jobs have lower occupational risks as compared to men's jobs and blue-collar jobs (Statistics Canada, 2007). In particular, the curriculum reflects patterns in the workers' compensation claims data, which often suggest there is a significantly higher rate of occupational accidents or at least compensation claims among male workers as compared to women workers. However, objectified data such as workers' compensation claims are not always accurate in their reflection of workers' OHS experiences. Research on the compensation claims process has revealed the presence of complex social structures that

discriminate against women. Workplace health and safety expert Messing explains, "while it is true that men work more often in jobs with many accidents, men do not always have more work-related injuries than women when comparisons are made within the same industry" (1998, 76) (15). The study also found that compared to men, women experience more industrial diseases but less accidents (15). Moreover, the study concluded that "[w]omen found it more difficult to prove that their stress-based illnesses were work-related" (16-17). Messing argues, "the compensation system has been set up in response to problems in jobs traditionally held by men" (13). The system often does not recognize or conceptualize women's problems as job-related medical conditions (13). Therefore, OHS knowledge reflecting statistical data may not always represent the real experiences of the injured workers and leave women workers at a disadvantage (16).

When the official curriculum is compared with the employment and compensation claims patterns among Newfoundland and Labrador youth, it becomes evident that the curriculum does not fully consider the young and women workers in the province when constructing the OHS knowledge. According to 2005 statistics (see table 7), more than 46% of the young workers from this province worked in the sales and service sector, and others worked in construction (12.28%), office related jobs (11.48%), primary resource extraction (6.91%) and processing and manufacturing (5.56%). Among them, the female youth were more heavily represented in the sales and service sector (58.54%) and office related jobs (14.78%), and male youth were mostly represented in the sales and service sector (34.85%) and the construction sector (22.28%).

Table 7 The Types of Occupations in which NL Youth Worked. *Source: Community Accounts (2006).*

Sex	All Occupations	Primary	Sales & Services	Office & Related	Construction & Related	Processing & Manufacturing	Other Sectors
Male	21,030	2,340	7,330	1,740	4,685	1,745	3,190
(%)		11.13	34.85	8.27	22.28	8.30	15.17
Female	20,405	525	11,945	3,015	405	560	3,955
(%)		2.57	58.54	14.78	1.98	2.74	19.38
Total	41,435	2,865	19,275	4,755	5,090	2,305	7,145
(%)		6.91	46.52	11.48	12.28	5.56	17.24

The cumulative pattern in workers' compensation claims data for youth between 2005 and 2009 reveals that most of the successful claims were made by construction workers (11%), retail sales workers (8%), cashiers (7%), food counter attendants/kitchen workers (6%) and grocery clerks/store shelf stockers (6%) (see table 8 below). The employment statistics and the compensation claims data for Newfoundland and Labrador youth corroborate the industry trend that youth are predominantly employed in various precarious types of jobs in the service sector (Breslin & Smith, 2005, 51). However, the Workplace Safety 3220 course curriculum reflects OHS knowledge that is mostly relevant to male dominated blue-collar occupations.

Table 8 Percentage of Total Lost-Time Claims Among Young Workers in NL (2005 to 2009). *Source: Prevention Services Department (2010).*

Young Workers Lost-time Claims 2005-2009: Claims by the five leading occupations	
Occupation	***Percentage of Total Lost-Time Claims (%)***
Construction trade helpers labourers	11
Retail sales clerks	8
Cashiers	7
Food counter attendant/ kitchen	6
Grocery clerk/store shelf stock	6

The official Workplace Safety 3220 curriculum and growing emphasis on this course in the high school curriculum also reflect the influence of government initiatives to promote entry into skilled trades in the province. Newspaper articles from Newfoundland and Labrador between the period of 1998 and 2011 reflect an increase in the number of funding opportunities and policy changes that are aimed to promote vocational training and skilled trades (for example, see Stacey, 2002). A number of instructors interviewed have identified the role of the provincial government (specifically the Department of Education) in influencing the conceptualization of the Workplace Safety 3220 course and its target audience. A number of respondents explained that in April 2008 the Workplace Safety 3220 course was taken out of the "Other" category of courses and added to the "Technology" category.[17] This reflects the government's aim at re-positioning the course as a technical body of knowledge. At least three respondents explained that they expected an increase in student enrolment in the future years due to the relabeling of the course. Respondent CoI 10R indicated a link between this 'technology-based' course and the government's renewed interest in supporting trade based vocational education and training:

> "[In the past the Department of Education] did away with industrial arts. Lot of schools were shutting down their woodworking shops and all that. And then all of a sudden, now, there's a bigger focus on trades because we do not have enough trades people out there to meet the demand that's needed. Because most schools were pushing our students to university!...Nothing wrong with that either, but you

[17] As part of the graduation requirements, each high school student has to receive a set number of credits from each category of courses, such as Science, Technology, Personal Development, Economic Education etc. Prior to 2008 students received two credits under the "Other" or "Personal Development" category of courses for the completion of the Workplace Safety 3220 course (CoI 4U & CoI 6U).

know…there's a new focus and a change, that the government…said "well okay, let's get skilled trades back in there…And now we are right back to where we were back in the 70s when we introduced industrial arts. Because it is recognized that we do need trades people. And that's where this course falls into."

The assumptions and biases evident in the content of the Workplace Safety 3220 curriculum contribute to a biased discourse, which reflects the influence of the power struggles and the relations of ruling that give shape to knowledge. Government bureaucracies and employer interest groups have influenced the content of the curriculum with the aim to develop a technical body of knowledge that can reinforce the discourse of individual responsibility on the part of the individual worker. Although the course instructors participate in this power struggle when they explore the OHS knowledge during classroom discussions, they remain within the boundaries of the official curriculum (Foucault, 1980 and Sleeter & Grant, 1991). According to the language of this curriculum, the burden of ensuring workers' OHS falls mainly on the workers themselves; it shifts the focus away from complex external factors that can shape workers' experiences and places it on the physiological and psychological factors related to the individual workers.

The Workplace Safety 3220 curriculum is helpful in constructing OHS knowledge as a set of technical terms and concepts as they relate of male dominated blue-collar occupations. However, it presents a unilateral body of knowledge that leaves major gaps in population groups and OHS knowledge specific to them. The curriculum needs to address young people, white-collar and pink-collar workers, and occupations located in different urban and rural areas. Along with the dominant discourses on OHS knowledge reflecting

workers' compensation and skilled trades, the curriculum needs to draw on alternative sources that can shape the OHS knowledge in the Workplace Safety 3220 curriculum.

Chapter 8 Conclusion

Workplace health and safety education specifically designed for youth has become one of the most prominent strategies in North America to combat occupational injuries and illnesses among young workers (McCloskey, 2008; Shearn, 2006; Kosny, 2005; Lee, Westaby, & Berg, 2004). It is also believed that these education programs can contribute to the development of employability skills and a culture of prevention and safety within this population (European Agency for Safety and Health at Work, 2004; WHSCC, 2004; Workers' Compensation Board of BC, 2003). Every Canadian province has at least one OHS education or training program specifically designed and targeted at youth, including Newfoundland and Labrador, which introduced the Workplace Safety 3220 course in 1998. The present study examined the content of the Workplace Safety 3220 course curriculum, and explored the construction of the OHS knowledge within it. Using a social constructivist framework derived from the literature on the sociology of knowledge, it examines how knowledge is socially constructed in the textual content of the course and during its delivery in the classroom, and how that knowledge reflects and contributes to the discourses on youth and their OHS issues.

The research revealed a unilateral and technical body of knowledge on workplace health and safety that reflects what Smith (1990) terms as objectified knowledge. The curriculum discusses concepts, ideas and terms in a discrete and decontextualized format which makes the concepts appear to be easily quantifiable, measurable and controllable. It leaves little room for alternative knowledge and ideas that do not fit the practices of objectifying knowledge. In particular, the curriculum demonstrates a specific focus on physical health and easily identifiable

occupational injuries and a marginalization of mental health and illnesses and other health conditions that may not be easily quantifiable and manageable. The curriculum uses this objectified knowledge to reinforce the dominant discourses suggesting that work related injuries, accidents and diseases are primarily the results of human errors and workers' lack of knowledge, and that education and training on OHS are among the most critical strategies to reduce such trends among youth. These assumptions are supported within the curriculum through the reinforcement of an individualized discourse, which focuses on self supervision and self regulation on the part of the young worker as the key mechanism to improve OHS. The process of objectifying knowledge is further evident in the Workplace Safety 3220 curriculum as it strips every OHS experience of the worker to develop a set of discrete data to develop a uniform body of technical knowledge. The curriculum does not discuss how a worker's gender, social class, age and geographic location can contribute to the shaping of the OHS knowledge. However, it reflects a unilateral knowledge that is for the most part relevant and applicable to male, blue-collar, working class workers who work in urban, industrialized centres. The curriculum is mostly silent about rural occupations, pink collar and white collar occupations, and precarious jobs where youth are concentrated. This form of knowledge leaves little room for multiple or alternative interpretations and understandings of OHS.

In many ways the objectified knowledge in the Workplace Safety 3220 curriculum reflects various psychological and physiological discourses that deterministically locate all OHS experiences to the individual worker. The curriculum also reflects statistical data on workers' accidents and injuries, particularly workers' compensation claims data, which reflect a high level of occupational incidences among male blue-collar workers. It also reflects recent government policies that are promoting the advancement of skilled trades in Newfoundland and Labrador. By

developing an objectified body of knowledge that silences alternative bodies of knowledge, the Workplace Safety 3220 curriculum fails to consider numerous socio-economic factors that affect OHS practices among young workers. Using Smith's theoretical framework, I have argued that the curriculum reflects a body of objectified knowledge that aids in the perpetuation of the power relations in society – it is informed by and part of the relations of ruling. This power relation is characterized by the ruling institutions, including the government, the education system, business organizations and other socio-economic infrastructures (such as the NL Employers' Council), and the ways they influence the OHS knowledge and experiences of the youth in society. This power relation has potential implications for youth OHS. Youth – particularly young female workers - may not be adequately prepared for the types of jobs in which they are typically employed, both in rural and urban work environments.

The first step to subverting the relations of ruling and the objectified knowledge within the Workplace Safety 3220 curriculum is to deconstruct and analyze it so as to ultimately develop a more holistic approach to understanding and creating OHS knowledge for youth. In further development and refinement of the Workplace Safety 3220 curriculum it would be useful to include youth organizations in curriculum development to aid in providing a more comprehensive understanding of youth OHS and the relevant knowledge that should be represented within the curriculum. It would also be helpful to include youth's OHS experience within the official curriculum to a greater extent. In addition to the existing content of the curriculum, the Workplace Safety 3220 textbook will benefit from incorporating additional knowledge on how young workers experience health and safety at work. In particular, the curriculum developers from WHSCC can be more specific about the types of jobs young people typically do and the types of injuries and illnesses they experience. Using real examples of youth

injuries from various scenarios, the curriculum can illustrate the actual experiences of youth. For example, when describing personal protective equipments the curriculum can describe how some of these equipments are used in job commonly held by young workers. In addition to outlining the OHS legislation, rules and policies, the curriculum can also discuss how these rules can be administered and exercised properly and safely at work. For instance, the curriculum can use examples of how young workers can exercise their OHS rights and responsibilities at work when they have a fear of job loss.

Moreover, in further developing and refining the Workplace Safety 3220 curriculum it would be useful to promote increased classroom discussions and activities so as to relate the students' OHS experiences to the OHS rules and regulations, and other OHS knowledge. As recommended by Chin (2006), instructors should apply "teacher-led but not teacher-dominated discourses" to enhance classroom interactions that encourage critical thinking and learning (1343). This process can improve young workers' ability to learn OHS knowledge and apply it in their everyday work environment. Finally, in the next phase of curriculum development, the curriculum developers from WHSCC can reinforce the knowledge that OHS education is an important strategy among many others that need to work together to reduce injuries and illnesses at work. While OHS education is critical in reducing occupational injuries and illnesses, it does not solve the issue in its entirety. Various OHS management strategies on the part of the government, employers, OHS committees and other socio-economic stakeholders are important in ensuring that each strategy succeeds. This holistic approach to OHS management should not only be reinforced within the OHS curriculum but also be reflected in the initiatives takes by WHSCC. In particular, this approach to managing OHS can help in shaping the education

initiatives that WHSCC's division of Pretension Services has been taking to specifically promote OHS among young workers.

These changes in the curriculum design and delivery can improve youth's understanding of OHS issues and better prepare them for the labour force. These recommendations can also raise awareness within government bureaucracies and other socio-economic institutions about biases, assumptions and omissions in other curriculum. Overall, the present research study has potential policy implications for WHSCC and the Government of NL, particularly for the Department of Education).

The present study is among few research studies that have examined the textual content of the OHS curriculum, as opposed to the more common area of research that examines the effects of introducing an OHS curriculum on the rate of occupational incidences (for example, Burke et al., 2006; Lamb et al., 2006; Linker et al., 2005; Loomis et al., 2005). To improve our understanding of how OHS knowledge is constructed, we need to continue this line of research. The present study maintains a focus on the construction of the OHS knowledge as it relates to the textbook and the instructors' curriculum delivery in the classroom. It is limited in its exploration of the role young workers play in the process of constructing and learning the OHS knowledge in the classroom and how they apply or suppress this knowledge based on their social constraints. The study is also limited in its understanding of the OHS experiences of young workers and the socio-economic backgrounds of the students who took the Workplace Safety 3220 course. An examination into the characteristics of students who tend to take the Workplace Safety 3220 course or similar courses can shed light on some of the biases in the curriculum. For example, the Workplace Safety 3220 curriculum's focus on male, blue-collar occupations can be examined in relation to the types of students who are streamed into the course by their instructors, parents

and other social agents. These limitations point to possibilities for future research on OHS knowledge with a greater focus on the young workers and their role in knowledge construction and learning. Further research projects need to consider using long-term classroom observations, and personal interviews with youth to understand how the OHS knowledge taught in class is learned and utilized by youth in their work and daily life.

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Appendices

Appendix A: Consent form for curriculum developers

Consent Form for Participation in the

Study on the Curriculum Content of the Workplace Safety 3220 Course

Title	The social construction of knowledge in the occupational health and safety curriculum in Newfoundland high-schools
Principal Researcher	Sumaiya Baqee
Sponsors	School of Graduate Studies, Memorial University, and The Atlantic RURAL Centre
Method of study	Interview with curriculum developers

You have been invited to take part in a research study I am conducting as a required component of my Master of Arts program in Sociology. It is up to you to decide whether or not to take part. Before you decide, you need to understand what the study is for, what risks you might take by being involved in this study and what benefits you might receive as a result of deciding to be a part of this study. This consent form explains the study. You will retain a copy of this consent form.

Purpose of study: Young people are taught about their occupational health and safety (OHS) in a number of ways. Since 1998, Newfoundland youth have been taught about OHS in the high school system through the *Workplace Safety 3220* course. In my research study, I intend to examine what and how Newfoundland youth are learning from this course. Specifically, I am asking: how is the OHS knowledge presented in the course curriculum, and how is it used in the classroom to teach young people abut their OHS?

Description of the study procedures: You are asked to participate in an audio-taped interview. If you consent to participate, what and how much you say are entirely up to you. Your participation is voluntary; you may refuse to answer any of the questions and are free to withdraw from the interview at any time.

Length of time: Depending on how long you are willing to stay and talk, the interview can last up to two hours.

Possible benefits, risks and discomforts: Upon completion of this research study, I am willing to share the major findings with you in the form of a report and/or an oral presentation. There are no foreseeable risks, discomforts, or inconveniences for the participants in this research study.

Liability statement: Signing this form gives me your consent to be in this study. It suggests that you understand the information about the research study. When you sign this form, you do not give up your legal rights. As the researcher, I will maintain my legal and professional responsibilities.

Confidentiality: Your confidentiality will be maintained throughout and upon completion of this study. Your name will be replaced with numerical codes. However, complete confidentiality cannot be guaranteed since only two people (including yourself) were involved in the actual writing of the textbook content. If you happen to discuss anything which is considered personal or harmful, these discussions will

still be documented. In case these information are used in the study, it will be done in a way that personal identities are not revealed.

The information gathered will only be used by me for the purpose of this research and will not be shared with others. All documents will be retained in case of challenge to results. They will be kept for five years after the research findings are published, as source documents as the university requires and then they will be destroyed. Electronic copies of notes and raw data will be kept in password protected computer files and paper copies will be kept in locked drawers at my home.

Questions: If you have further questions about taking part in this study, you can contact one of the research supervisors: Dr. Nicole Power at npower@mun.ca, or Dr. Kathryne Dupré at kdupre@mun.ca.

The proposal for this research has been approved by the Interdisciplinary Committee on Ethics in Human Research at Memorial University. If you have ethical concerns about the research (such as the way you have been treated or your rights as a participant), you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at 737-8368.

To be signed by the participant: I have read and understood the consent form, and I agree to participate. I had the opportunity to ask questions and to discuss the research study. I understand that my participation is voluntary and that I can stop participating at any time, without having to give a reason.

_____ _____

Participant's signature Date

To be signed by the investigator: I have explained this study to the best of my ability. I invited questions and gave answers. I believe that the participant fully understands what is involved in being in the study, any potential risks of the study and that he or she has freely chosen to be in the study.

_____ _____

Researcher's signature Date

Appendix B: Interview schedule for curriculum developers

Interview Schedule for Curriculum Developers (Researcher's Version)

Study on the Curriculum Content of the Workplace Safety 3220 Course

Welcome

- Introduce myself as the researcher
- Go through consent form and what it means to participate
- How the interview will work
- Possible questions before beginning the interview

Taping commences

Themes for Discussion

1. Goals of the Workplace Safety 3220 course

1 ● What are some of the main goals of developing this course?
– reduce youth injury, certification, general education, increase youth's employability etc.

2 ● Is this course intended to teach youth about their OHS needs in the immediate future (for example during summer jobs), or in the long run (for their future career)?

3 ● Was this curriculum designed to address students as employees, or as employers, or both?

4 ● What are some of the ways in which this course can be improved now?

2. Target students for the course

5 ● What are the kinds of students that this course is mainly targeted at?
– men/women, types of students (in terms of academic performance, area of interest, occupational expectations and aspirations)

6 ● Should the course remain as an elective, or should it be made mandatory for all students?

3. Curriculum Development

7 ● What are some of the major sources of information that were used when developing the content of the textbook?
- other OHS education textbooks, training manuals, etc.

8 ● Were there other organizations or individuals who were directly or indirectly involved in the development of the curriculum?

9 ● Has there been any revisions done to the curriculum, and the textbook in particular? If so, what are some of the main changes made?

10 ● How did you choose what topics would be included in the textbook?

11 ● How were the topics prioritized in the textbook? That is, how did you decide which chapter would be placed after which chapter?

12 ● Are there any professional development programs offered to the school instructors? If so, can you please describe the program?

4. Additional Comments from the participant?

Wrap Up

Questions

Thank-you

Interview Schedule for Curriculum Developers (Participant's Version)

Study on the Curriculum Content of the Workplace Safety 3220 Course

Background:

Young people are taught about their occupational health and safety (OHS) in a number of ways. Since 1998, Newfoundland youth have been taught about OHS in the high school system through the *Workplace Safety 3220* course. In my research study, I intend to examine what and how Newfoundland youth are learning from this course. Specifically, I am asking: how is the OHS knowledge presented in the course curriculum, and how is it used in the classroom to teach young people abut their OHS?

You are asked to participate in an audio-taped interview. If you consent to participate, what and how much you say are entirely up to you. Your participation is voluntary; you may refuse to answer any of the questions and are free to withdraw from the interview at any time. Wherever possible, your privacy and confidentiality will be maintained throughout and upon completion of this study. Depending on how long you are willing to stay and talk, the interview can last up to two hours. Upon completion of this research study, I am willing to share the major findings with you in the form of a report and/or an oral presentation.

If you have further questions about taking part in this study, you can contact me at sumaiyabaqee@yahoo.ca, or one of the research supervisors: Dr. Nicole Power at npower@mun.ca, or Dr. Kathryne Dupré at kdupre@mun.ca.

The proposal for this research has been approved by the Interdisciplinary Committee on Ethics in Human Research at Memorial University. If you have ethical concerns about the research (such as the way you have been treated or your rights as a participant), you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at 737-8368.

Interview Format:

Welcome

- Introduce myself as the researcher
- Go through consent form and what it means to participate
- How the interview will work
- Possible questions before beginning the interview

Taping commences

Themes for Discussion

1. Goals of the *Workplace Safety 3220* course

- What are some of the main goals of developing this course?

2. Target students for the course

- What are the kinds of students that this course is mainly targeted at?
- Should this course remain as an elective, or should it be made mandatory?

3. Curriculum Development

- What are some of the major sources of information that were used when developing the content of the textbook?
- How did you choose what topics would be included in the textbook?

Wrap Up

Questions

Thank-you

Appendix C: Phone script for curriculum developers

Telephone script to invite curriculum developers to participate in interviews

Study on the Curriculum Content of the Workplace Safety 3220 Course

Hello. My name is Sumaiya Baqee. I am a Master's student at the Memorial University's Sociology department. I am calling you today to share some information about my research project and to see if you may be interested in helping me with my work. I am studying how the *Workplace Safety 3220* curriculum is taught in high schools around Newfoundland, and how it relates to Newfoundland youth and their OHS issues. Is now a good time?

If no –
When would be a good time to call?

If yes –
In my research I am examining how the occupational health and safety knowledge is constructed in the textbook and how it is taken up in the classroom setting. I am also examining how this textbook knowledge relates to the knowledge on youth and their OHS needs, particularly knowledge on Newfoundland youth.

In order to examine how the OHS knowledge is constructed for youth, I plan to examine the content of the textbook, see how course instructors teach the course, and talk to the curriculum developers. Ms. Brenda Greenslade, the Director of the Preventions Department at Workplace Health and Safety Compensation Commission, informed me that you were involved in developing the textbook. I wanted to ask you if you would be interested in doing a personal interview with me. I want to discuss how the curriculum content was developed, the goals of developing the course and so on. Is this something you can participate in?

If no –
Thank you for your time. If you change your mind at any point, you can contact me at – (Provide contact information).

If yes –
The interview will be semi-structured and should last for about two hours. It will be audio-taped, but your confidentiality will be maintained throughout the research project. And it should be mentioned that this project has received ethics approval from the ICEHR at Memorial University, which reviews all research projects involving human participants. I really appreciate your interest in participating and after the study is complete, I will be happy to share the major findings with you.

At this stage, I would like to send you a copy of the interview schedule, which contains some more details about the research and also outlines the themes of the interview. Hopefully it will help you familiarize yourself with the topic and help with the interview. Would you prefer to receive it via email or by mail? (Collect contact information). After you receive this document, I will contact you again and then we can arrange for a face-to-face interview. We can arrange for a time that is convenient for you.

If you have any questions about taking part in this study, you can contact me at sumaiyabaqee@yahoo.ca, or you can contact my supervisors:

Dr. Kathryne Dupré, Phone: 737-8524, Email: kdupre@mun.ca or
Dr. Nicole Power, Phone: 737-6914, Email: npower@mun.ca

Thank you for your time.

Appendix D: Phone script for course instructors

Telephone script to invite course instructors to

participate in interviews and/or participant observations

Study on the Curriculum Content of the Workplace Safety 3220 Course

Hello. My name is Sumaiya Baqee. I am a Master's student at the Memorial University's Sociology department. I am calling you today to share some information about my research project and to see if you may be interested in helping me with my work. I am studying how the *Workplace Safety 3220* curriculum is taught in high schools around Newfoundland, and how it relates to Newfoundland youth and their OHS issues. Is now a good time?

If no –
When would be a good time to call?

If yes –
So far very little has been done to critically examine the knowledge that is presented in the *Workplace Safety 3220* curriculum. In my research I am examining how the occupational health and safety knowledge is constructed in the textbook and how it is taken up in the classroom setting.

I wanted to ask you if you could participate in this research by doing a personal interview with me. I will mostly ask questions about how the course is taught in class, the types of students the course is targeted to and so on. Is this something you can participate in?

If no –
Do you know any other instructor from your school or some other school, who teaches this course and may be interested in participating?

If yes –
The interview will be semi-structured and should last for about two hours. It will be audio-taped, but your confidentiality will be maintained throughout the research project. And it should be mentioned that this project has received ethics approval from the ICEHR at Memorial University, which reviews all research projects involving human participants. I also have the approval of the Eastern School District – Newfoundland and Labrador. I really appreciate your interest in participating and after the study is complete, I will be happy to share the major findings with you.

In addition to doing these interviews with course instructors from different schools, I am also going to do participant observation of *Workplace Safety 3220* classes in one rural and one urban school. I will observe the classroom for one week to see how students and instructors interact and how the OHS knowledge is taught. Is this something I could do in your classroom?

If no –

I still thank you for your interest in doing the interview. I would like to send you a copy of the interview schedule so that you can get some background information on the project and see an outline of the interview. Should I email it to you, or do you prefer receiving it in the mail? (Collect contact information). After you receive the document, and agree to participate, I will contact the school principal to request his/her approval. Once they give their approval, I will contact you again and set a time for the telephone interview. We can arrange for a time that is convenient to you. (Then move to – "if you have any questions about…")

If yes –
Depending on the number of instructors who show interest in the participant observation and other factors such as my transportation and accommodation arrangements, I may or may not choose to do the observation in your classroom. However, I just wanted to see if you might be interested in taking part. Once I find out the details on transportation and accommodation, I will contact you again to make the final arrangements. If the participant observation is done in your class, then the interview will be done face-to-face. Otherwise it will have to be done over the phone. We can arrange for a time that is convenient to you.

In the meantime I would like to send you a copy of the interview schedule, which has some more details on the research topic and also outlines the themes of the interview. Should I email it to you, or do you prefer receiving it in the mail? (Collect contact information). After you receive the document, and agree to participate, I will contact the school principal to request his/her approval for both the participant observation and the interview. Once they give their approval, I will contact you again and set a time for the interview, and perhaps the participant observation as well. We can arrange for a time that is convenient to you.

If you have any questions about taking part in this study, you can contact me again at sumaiyabaqee@yahoo.ca, or you can also contact my supervisors:

Dr. Kathryne Dupré, Phone: 737-8524, Email: kdupre@mun.ca or
Dr. Nicole Power, Phone: 737-6914, Email: npower@mun.ca

Thank you for your time.

Appendix E: Consent form for instructors

Consent Form for Participation in the Study on the

Curriculum Content of the Workplace Safety 3220 Course

Title	The social construction of knowledge in the occupational health and safety curriculum in Newfoundland high-schools
Principal Researcher	**Error! Reference source not found.**
Sponsors	School of Graduate Studies, Memorial University, and The Atlantic RURAL Centre
Method of study	Interview with course instructors

I invite you to take part in a research study I am conducting as a required component of my Master of Arts program in Sociology. As the *Workplace Safety 3220* course instructor, and as the school principal, it is up to you to decide whether or not to take part. Before you decide, you need to understand the purposes of the study, and its associated risks and benefits to you. This consent form explains the study. Each of you will retain a copy of this consent form.

Purpose of study: Young people are taught about their occupational health and safety (OHS) in a number of ways. Since 1998, Newfoundland youth have been taught about OHS in the high school system through the *Workplace Safety 3220* course. In my research study, I intend to examine what and how Newfoundland youth are learning from this course. Specifically, I am asking: how is the OHS knowledge presented in the course curriculum, and how is it used in the classroom to teach young people abut their OHS?

Description of the study procedures: You are asked to participate in an audio-taped interview. If you consent to participate, what and how much you say are entirely up to you. Your participation is voluntary; you may refuse to answer any of the questions and are free to withdraw from the interview at any time.

Length of time: Depending on how long you are willing to stay and talk, the interview can last up to two hours.

Possible benefits, risks and discomforts: Upon completion of this research study, I am willing to share the major findings with you in the form of a report and/or an oral presentation. There are no foreseeable risks, discomforts, or inconveniences for the participants in this research study.

Liability statement: Signing this form gives me your consent to be in this study. It suggests that you understand the information about the research study. When you sign this form, you do not give up your legal rights. As the researcher, I will maintain my legal and professional responsibilities.

Confidentiality: Your privacy and confidentiality will be maintained throughout and upon completion of this study. Your name, and the names of your school and community will be replaced with numerical codes. If you happen to discuss anything which is considered personal or harmful, these discussions will

still be documented. In case these information are used in the study, it will be done in a way that personal identities are not revealed.

The information gathered will only be used by me for the purpose of this research and will not be shared with others. All documents will be retained in case of challenge to results. They will be kept for five years after the research findings are published, as source documents as the university requires, and then they will be destroyed. Electronic copies of notes and raw data will be kept in password protected computer files and paper copies will be kept in locked drawers at my home.

Questions: If you have further questions about taking part in this study, you can contact me at sumaiyabaqee@yahoo.ca, or one of the research supervisors – Dr. Nicole Power at npower@mun.ca, or Dr. Kathryne Dupré at kdupre@mun.ca.

The proposal for this research has been approved by the Interdisciplinary Committee on Ethics in Human Research at Memorial University. If you have ethical concerns about the research (such as the way you have been treated or your rights as a participant), you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at 737-8368.

To be signed by the participants: I have read and understood the consent form, and I agree to participate. I had the opportunity to ask questions and to discuss the research study. I understand that my participation is voluntary and that I can stop participating at any time, without having to give a reason.

_____ _____

Instructor's signature Date

_____ _____

Principal's signature Date

To be signed by the investigator: I have explained this study to the best of my ability. I invited questions and gave answers. I believe that the participants fully understand what is involved in being in the study, any potential risks of the study and that he or she has freely chosen to be in the study.

_____ _____

Researcher's signature Date

Appendix F: Interview schedule for instructors

Interview Schedule for Course Instructors (Researcher's Version)

Study on the Curriculum Content of the Workplace Safety 3220 Course

Welcome

- Introduce myself as the researcher
- Go through the consent form and what it means to participate
- How the interview will work
- Possible questions before beginning the interview

Taping commences

Themes for Discussion

1. The use of the textbook and the instructor's guide

1 ● Can you please tell me a little bit about how you teach the course?
- how long you take to finish the course

2 ● How do you use the textbook and the instructor's guide when teaching the course?

3 ● Do you ever shape the course materials to fit the student's interest or needs? For example in terms of the industrial sectors that primarily hire youth in your surrounding community?

4 ● The instructor's guide talks about using different activities and assessment techniques, including students maintaining journal, doing interviews with students and giving pencil and paper assignments. What are some of the techniques that you use in your class?
- for example, do you use the chapter-end questions to evaluate students?

5 ● Since the textbook does not have any material under the First Aid chapter, how do you teach this chapter?

6 ● Are there any chapters in particular that are always covered or not covered during the academic year?

7 ● Do you tend to follow the order in which the topics are presented in the textbook?

8 ● Are there any topics in the textbook that seem unnecessary, or are there topics that should be included in the textbook?

9 ● Do you receive any form of professional development program to teach this course? If so, can you please describe the program?
– Who provides such program? What kinds of materials are used? How long is the program?

10 ● Are there any other sources, such as books or pamphlets, that you use to teach the students about their occupational health and safety?

2. Target students for the course

11 ● How many students do you have in your class? How many are young men and how many are young women?

12 ● What types of students usually take this course as an elective?
– Do you have any idea about why some students take the course and not others?

13 ● What kinds of students is this course mainly targeted at?
– men/women, types of students (in terms of academic performance, area of interest)

14 ● Should the course remain as an elective, or should it be made mandatory for all students?

3. Goals of the Workplace Safety 3220 course

15 ● What are some of the main goals of this course? Why did the government take the initiative to introduce this course?
– Reduce youth injury, certification, general education, increase youth's employability etc.

16 ● Is this course intended to teach youth about their OHS needs in the immediate future (for example during summer jobs), or in the long run (for their future career)?

17 ● How can this course be improved?

4. Additional Comments from the participant?

Wrap Up

Questions

Thank-you

Interview Schedule for Course Instructors (Participant's Version)

Study on the Curriculum Content of the Workplace Safety 3220 Course

Background:

Young people are taught about their occupational health and safety (OHS) in a number of ways. Since 1998, Newfoundland youth have been taught about OHS in the high school system through the *Workplace Safety 3220* course. In my research study, I intend to examine what and how Newfoundland youth are learning from this course. Specifically, I am asking: how is the OHS knowledge presented in the course curriculum, and how is it used in the classroom to teach young people abut their OHS?

You are invited to participate in an audio-taped interview for this study. If you consent to participate, what and how much you say are entirely up to you. Depending on how long you are willing to stay and talk, the interview can last up to two hours. Your participation is voluntary; you may refuse to answer any of the questions and are free to withdraw from the interview at any time. Wherever possible, your privacy and confidentiality will be maintained throughout and upon completion of this study. Upon completion of this research study, I am willing to share the major findings with you in the form of a report and/or an oral presentation.

If you have further questions about taking part in this study, you can contact me at sumaiyabaqee@yahoo.ca, or one of the research supervisors – Dr. Nicole Power at npower@mun.ca, or Dr. Kathryne Dupré at kdupre@mun.ca.

The proposal for this research has been approved by the Interdisciplinary Committee on Ethics in Human Research at Memorial University. If you have ethical concerns about the research (such as the way you have been treated or your rights as a participant), you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at 737-8368.

Interview Format:

Welcome

- Introduce myself as the researcher
- Go through consent form and what it means to participate
- How the interview will work
- Possible questions before beginning the interview

Taping commences

Themes for Discussion

1. The use of the textbook and the instructor's guide

- Can you please tell me a little bit about how you teach the course?

2. Target students for the course

- How many students do you have in your class? How many are young men and how many are young women?
- What types of students usually take this course as an elective?

3. Goals of the Workplace Safety 3220 course

- What are some of the main goals of this course?

Wrap Up

Questions

Thank-you

Appendix G: Phone script for school principal

Telephone script to seek approval of school principals to

allow the instructor's participation in the research

Study on the Curriculum Content of the Workplace Safety 3220 Course

Hello. My name is Sumaiya Baqee. I am a Master's student at the Memorial University's Sociology department. I am calling you today to share some information about my research project and to see if you may be interested in helping me with my work. I am studying how the *Workplace Safety 3220* curriculum is taught in high schools around Newfoundland, and how it relates to Newfoundland youth and their OHS issues. Is now a good time?

If no –
When would be a good time to call?

If yes –
So far very little has been done to critically examine the knowledge that is presented in the *Workplace Safety 3220* curriculum. In my research I am examining how the occupational health and safety knowledge is constructed in the textbook and how it is taken up in the classroom setting.

I wanted to ask you if you could participate in this research by doing a personal interview with me. I will mostly ask questions about how the course is taught in class, the types of students the course is targeted to and so on. Is this something you can participate in?

If seeking permission for only personal interview –
As a part of this study, I am doing personal interviews with *Workplace Safety 3220* instructors from different schools. I have already spoken to Mr./Ms._____, and he/she has shown interest in participating. I also have permission from the ESDNL. I wanted to ask for your permission to do the interview. Before the interview is carried out, all three parties will sign the consent form to ensure that we all understand what the interview entails.

If no –
Would you like to see more information before you make your decision? I can send you the interview schedule and the consent form for more details (collect contact information).

If yes –
I really appreciate your approval. After the study is complete, I will be happy to share the major findings with you and Mr./Ms._____. And it should be mentioned that this project has received ethics approval from the ICEHR at Memorial University, which reviews all research projects involving human participants.

If you wish, I can send you a copy of the interview schedule so that you can get some background information on the project and see an outline of the interview. Should I email it to you, or do you prefer receiving it in the mail? (Collect contact information). After you receive

the document, and give approval, I will contact Mr./Ms._____ and set a time for the telephone interview. (Then move to – "if you have any questions about…")

If seeking permission for both personal interview and participant observation–
As a part of this study, I am doing personal interviews with *Workplace Safety 3220* instructors from different schools. I am also doing participant observations of classrooms to see how the students and the instructor interact and how the course is taught in class. I will do the observation for one week. I will explain to the students the purpose of my study, and the voluntary nature of their participation. I have already spoken to Mr./Ms._____, and he/she has shown interest in participating. I also have permission from the ESDNL. I wanted to ask for your permission to do the interview and the participant observation. Before the interview is carried out, all three parties will sign the consent form to ensure that we all understand what the interview entails.

If no –
Would you like to see more information before you make your decision? I can send you the interview schedule and the consent forms for more details (collect contact information).

If yes –
I really appreciate approval. After the study is complete, I will be happy to share the major findings with you and Mr./Ms._____. And it should be mentioned that this project has received ethics approval from the ICEHR at Memorial University, which reviews all research projects involving human participants.

If you wish, I can send you a copy of the interview schedule and the consent forms so that you can get some background information on the project. Should I email it to you, or do you prefer receiving it in the mail? (Collect contact information). After you receive the document, and give approval, I will contact Mr./Ms._____ and set a time for the telephone interview.

If you have any questions about taking part in this study, you can contact me again at sumaiyabaqee@yahoo.ca, or you can also contact my supervisors:

Dr. Kathryne Dupré, Phone: 737-8524, Email: kdupre@mun.ca or
Dr. Nicole Power, Phone: 737-6914, Email: npower@mun.ca

Thank you for your time.

Appendix H: Consent form for participant observations

Consent Form for Participation in the Study on the

Curriculum Content of the Workplace Safety 3220 Course

Title	The social construction of knowledge in the occupational health and safety curriculum in Newfoundland high-schools
Principal Researcher	**Error! Reference source not found.**
Sponsors	School of Graduate Studies, Memorial University, and The Atlantic RURAL Centre
Method of Study	Participant Observation

I invite you to take part in a research study I am conducting as a required component of my Master of Arts program in Sociology. As the *Workplace Safety 3220* course instructor, and as the school principal, it is up to you to decide whether or not to take part. Before you decide, you need to understand the purposes of the study, and its associated risks and benefits to you. This consent form explains the study. Each of you will retain a copy of this consent form.

Purpose of study: Young people are taught about their occupational health and safety (OHS) in a number of ways. Since 1998, Newfoundland youth have been taught about OHS in the high school system through the *Workplace Safety 3220* course. In my research study, I intend to examine what and how Newfoundland youth are learning from this course. Specifically, I am asking: how is the OHS knowledge presented in the course curriculum, and how is it used in the classroom to teach young people abut their OHS?

Description of the study procedures: You are requested to allow me to conduct participant observation in your *Workplace Safety 3220* class for one week in a row. I will observe classroom interactions and activities undertaken by the instructor and the students. On the first day of observation, I will introduce myself to the students, describe the research study, and explain the purposes of the observation. No other direct interaction between the students and the researcher is planned. Notes on my observations will be documented in a laptop computer. Your participation in this process is voluntary; you are free to withdraw your permission at any time.

Length of time: The observation will be carried on for a week during the *Workplace Safety 3220* class.

Possible benefits, risks and discomforts: Upon completion of this research study, I am willing to share the major findings with you in the form of a report and/or an oral presentation. There are no foreseeable risks, discomforts, or inconveniences for the participants in this research study.

Liability statement: Signing this form gives me your consent to be in this study. It suggests that you understand the information about the research study. When you sign this form, you do not give up your legal rights. As the researcher, I will maintain my legal and professional responsibilities.

Confidentiality: Your privacy and confidentiality and that of your students will be maintained throughout and upon completion of this study. Your name, and the names of your school and community will be replaced with numerical codes. If you or the students happen to discuss anything which is considered personal or harmful, these discussions will still be documented. In case these information are used in the study, it will be done in a way that personal identities are not revealed. Complete confidentiality cannot be guaranteed due to the possibility that the students present in the class will discuss your participation in the research with people in the community.

The information gathered will only be used by me for the purpose of this research and will not be shared with others. All documents will be retained in case of challenge to results. They will be kept for five years after the research findings are published, as source documents as the university requires, and then they will be destroyed. Electronic copies of notes and raw data will be kept in password protected computer files and paper copies will be kept in locked drawers at my home.

Questions: If you have further questions about taking part in this study, you can contact me at sumaiyabaqee@yahoo.ca, or one of the research supervisors – Dr. Nicole Power at npower@mun.ca, or Dr. Kathryne Dupré at kdupre@mun.ca.

The proposal for this research has been approved by the Interdisciplinary Committee on Ethics in Human Research at Memorial University. If you have ethical concerns about the research (such as the way you have been treated or your rights as a participant), you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at 737-8368.

To be signed by the participants: I have read and understood the consent form, and I agree to participate. I had the opportunity to ask questions and to discuss the research study. I understand that my participation is voluntary and that I can stop participating at any time, without having to give a reason.

_____ _____

Instructor's signature Date

_____ _____

Principal's signature Date

To be signed by the investigator: I have explained this study to the best of my ability. I invited questions and gave answers. I believe that the participants fully understand what is involved in being in the study, any potential risks of the study and that he or she has freely chosen to be in the study.

_____ _____

Researcher's signature Date

Appendix I: Consent form for students' parents

Consent Form for Students' Participation in the Study on the

Curriculum Content of the *Workplace Safety 3220* Course

Title	The social construction of knowledge in the occupational health and safety curriculum in Newfoundland high-schools
Principal Researcher	**Error! Reference source not found.**
Sponsors	School of Graduate Studies, Memorial University, and The Atlantic RURAL Centre
Method of Study	Participant Observation

I am a graduate student at Memorial University, and I am doing a research study as a required component of my degree. In this study I am examining how young people learn about their occupational health and safety, and as a part of this, I am examining how the *Workplace Safety 3220* course is taught to the students in the classroom environment. I will attend the *Workplace Safety 3220* class at this school for one week as an observer. On the first day of my observation, I will introduce myself to the students, describe the research study, and explain the purposes of the observation. I do not plan to have any other direct interaction with the students.

The students in the classroom are not likely to face any risks, discomforts, or inconveniences as a result of this research. The students' privacy and confidentiality will be maintained throughout this study. The students' names will not be recorded at any time; the names of the school and the community will be replaced with numerical codes. If the students happen to discuss anything which is considered personal or harmful, these discussions will be used in the study in a way that personal identities are not revealed.

The information gathered will only be used by me for the purpose of this research. When the research findings are shared with others, it will only be presented in the form of general reports and presentations. All collected documents will be retained in case of challenge to results. They will be kept for five years after the research findings are published, as source documents as the university requires and then they will be destroyed. Electronic copies of notes and raw data will be kept in password protected computer files and paper copies will be kept in locked drawers.

The school principal and the *Workplace Safety 3220* instructor have given their permission to conduct this study. Because your child is under-aged and cannot provide full consent, I am requesting your permission to conduct the research.

Liability statement: Signing this form gives me your consent to conduct the participant observation of the classroom in the presence of your child. It suggests that you understand the information about the research study. When you sign this form, you or your child do not give up your legal rights. As the researcher, I will maintain my legal and professional responsibilities. You, the school administration, and I will retain a copy of this consent form.

Questions: If you have further questions about taking part in this study, you can contact me at sumaiyabaqee@yahoo.ca, or one of the research supervisors – Dr. Nicole Power at npower@mun.ca, or Dr. Kathryne Dupré at kdupre@mun.ca.

The proposal for this research has been approved by the Interdisciplinary Committee on Ethics in Human Research at Memorial University. If you have ethical concerns about the research (such as the way you have been treated or your rights as a participant), you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at 737-8368.

To be signed by the parents/guardians of participating students: I have read and understood the consent form, and I agree to have my child in the classroom during the participant observation. I understand that my child's participation in this process is voluntary. I am free to withdraw my permission for observation at any time, without having to give a reason.

_____ _____

Parent/guardian's signature Date

To be signed by the investigator: I have explained this study to the best of my ability. I believe that the participant fully understands what is involved in the study, any potential risks of the study and that he or she has freely chosen to provide full consent to the study.

_____ _____

Researcher's signature Date