WOMEN SCIENCE TEACHERS' EXPERIENCES DURING A TIME OF TRANSITION

by

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A thesis

submitted in partial fulfilment of the requirements

for the degree of

Master of Education

FACULTY OF EDUCATION

LAKEHEAD UNIVERSITY

THUNDER BAY, ONTARIO

November 2005

Your file Votre référence
ISBN: 978-0-494-15644-5
Our file Notre référence
ISBN: 978-0-494-15644-5

DEDICATION

This work is dedicated to my parents,

Lillian and Gilbert Topham,

for instilling in me a love of learning.

ACKNOWLEDGEMENTS

Several people assisted me in the completion of this journey. First, I would like to thank my advisor, Dr. Hope-Arlene Fennell, for her guidance, expertise, and constructive criticism. The giving of her time to read drafts, offer suggestions and provide moral support, often during her holidays, is greatly appreciated.

I would also like to thank Dr. Sonja Grover, my committee member, for her helpful suggestions.

My Internal Examiner and External Examiner also deserve thanks for the time and thought they invested in reading this thesis.

I want to thank the six women Science teachers, who agreed to be participants in this study, for the time and commitment they gave during the interview process. Without their cooperation the study could not have been completed.

I also want to thank Diana Mason for her patient and knowledgeable responses to my queries.

Finally, I would like to thank my mother, Lillian Topham, and my sister, Della Topham-Foisie, for their encouragement, support and love throughout this journey. Della also deserves thanks for her work as proof reader.

Abstract

With the projected mass retirements of male secondary school teachers, Ontario Ministry of Education statistics suggest that female teachers will – for the first time in Ontario history – constitute the majority of Ontario Secondary School teachers. To date, most of the research on the feminization of teaching has focused on the issue at the elementary school level where the phenomenon had been very noticeable for decades. Feminization of an occupation occurs when women move *en masse* into a profession or occupation and men leave it. Little research exists on feminization at the secondary school level. The purpose of this qualitative study was to determine in which ways feminization of secondary school teaching has occurred. Six female secondary school Science teachers from two northern Ontario school boards were interviewed. The study was framed around two focus questions: "What are the experiences of women teaching in Science, a subject area traditionally dominated by men?" and, "In the educational setting, how are these women treated by others?" Data provided by the women suggest that feminization is occurring within secondary schools in northern Ontario. While working in an increasingly feminized environment, these female Science teachers were accepted as qualified and competent by those they worked with and encountered in the educational setting.

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CHAPTER ONE

The Purpose

Introduction

In the next few years massive retirements of male teachers from Ontario secondary schools are expected. With these retirements there will be more women than male teachers in Ontario's secondary school system. An examination of Ontario Ministry of Education statistics for the 1999-2000 school year indicates that 49.6 percent of full-time equivalent secondary school teachers are women. Fifty-nine percent of the male teachers who are qualified to teach in secondary schools, and who hold Intermediate-Senior qualifications, are in the 55-years-and-over age group and are due to retire soon (Giguere, 1999). This suggests that women will soon occupy the majority of secondary school teaching positions. This feminization of the teaching profession in Ontario is a continuation of the trend which began in elementary schools in the 1800s (MacLeod, 1988).

Three secondary school subjects traditionally perceived as the domain of male teachers are mathematics, science and computer technology (MacLeod, 1988, p. 31-32). A Canadian Teachers' Federation survey of British Columbia secondary school teachers in 1986-1987 noted 17 percent of math teachers, 14 percent of science teachers and 10 percent of computer technology teachers were women (MacLeod, 1988). However, by 1996, the percentage of women teachers had increased to 29.6 of math, 27 of science, and 15.4 of computer education (British Columbia Teachers' Federation, 1999). The increase in the number of women teachers suggests the possibility that feminization may be occurring within these subjects.

Essen (1999), who studied the feminization of Dutch elementary and secondary schools, defined feminization as "the increasing participation of women in the profession"

(p. 414), whereas Williams (2002) defined the term as "the numerical predominance of women over men and their concentration in particular sectors" (p. 2), such as that seen in elementary education. Thus, the feminization of an occupation occurs when women move *en masse* into a profession or occupation and men leave it, creating a situation where the proportion of women increases. This phenomenon has been accompanied by social and economic consequences for women teachers, their students, and society (DeCorse & Vogtle, 1997).

There is a substantial amount of historical and quantitative research documenting the feminization of teaching and its impact on the elementary grades. An extensive search, however, revealed little research on feminization and increased percentages of women at the secondary level. In exploring the consequences of the feminization of elementary schools, Cammack and Phillips (2002) examined the gender discourses of teachers. Williams (1992) studied the treatment of males in female-dominated occupations. Recently, much of the research on the impact of feminization has focused on the elementary level and on males teaching in primary grades or enroled in the primary division of teacher education programs (Bradley, 2000; Coulter & McNay, 1993; DeCorse & Vogtle, 1997; McNay, 2001). Cammack and Phillips' (2002) and Montecinos and Nielsen's (1997) studies are exceptions because they considered the experiences of both male and female teacher education students. No studies that considered the experiences of female secondary school teachers in a period of increasing feminization within secondary school staffs, or the experiences of women as teachers in secondary school subjects that have been traditionally dominated by men, were noted.

The Purpose of the Study

The purpose of this study was to determine in which ways feminization of secondary

school teaching has occurred. In this study, six women who were Science teachers in secondary schools in two northern Ontario school boards were interviewed about their teaching experiences. The questions guiding the study were:

1) What were the experiences of women teaching in a subject area traditionally dominated by men?

2) In the educational setting, how were these women treated by others?

Constraints on the Study Design. The following were constraints on the study's design.

1. Due to the small number of participants interviewed for the study, the findings are limited to the experiences of the teachers in two Northern Ontario school boards.
2. Due to the experience criteria required of participants, the findings may not be replicated with other secondary school teachers.
3. Conducting interviews over the telephone prevented the me from observing the participants' body language.
4. Semi-structured interviews were the only means of collecting data.
5. Due to the large number of potential study participants within Ontario secondary schools, participants were limited to those teaching in the discipline of Science.
6. Study participants were limited to those in Northern Ontario, in relatively close geographical proximity to me, thereby helping to keep my long-distance telephone charges lower.

Assumptions. The following assumptions were made in this study and should be considered when interpreting the findings.

1. The participants understood the interview questions. The questions were clearly worded and the participants had the opportunity to request clarification if they did not understand

questions.

2. Participants read and reflected on the interview questions prior to each interview and they responded thoughtfully and honestly. To check for response bias, I designed interview questions, and asked probing questions during the interviews, that encouraged participants to provide thick, rich descriptions in their responses. As a further check for response bias, questions asked over the course of the three interviews occasionally caused participants to restate, or elaborate on, earlier responses. Also, I asked participants to elaborate or clarify responses in subsequent interviews.
3. The interview questions procured the necessary information in sufficient detail and quantity to conduct a valid analysis. Participants' responses to interview questions over the course of two or three interviews resulted in a saturation of data as earlier stories and comments were reiterated.

Significance of the Study

Researchers have raised serious social, economic, and political concerns relating to the feminization of the elementary teaching panel (Apple & Jungck, 1990; Bradley, 2000; DeCorse & Vogtle, 1997; Giguere, 1999). These concerns will become even more critical if the phenomenon is now occurring at the secondary level. With fewer men entering the profession, there is concern that the dearth of male teachers, especially at the elementary level, contributes to fewer positive, consistent, male role models in children's lives at a time when increasing numbers of families are under the control of a female single parent (Bradley, 2000). Also, a dearth of male teachers may result in fewer boys choosing teaching as a career. Further, there is fear that the teaching profession will lose status. DeCorse and Vogtle (1997) and Giguere (1999), for example, maintain that, historically, when the gender ratio in an occupation favours women, wages paid to those in the profession often decrease. Apple and

Jungck (1990) claim that the recent conservative movements in Britain and the United States to control, centralize, and rationalize teaching, despite the talk of empowerment, is rooted in the perception that teaching is women's work. This is a perception which is reinforced by the feminization of the teaching profession.

Studies focusing on the feminization of teaching tend to focus on the elementary division and on male elementary teachers or teacher education students (Bradley, 2000; Cammack & Phillips, 2002; Coulter & McNay, 1993; DeCorse & Vogtle, 1997; Kaufman, Westland, & Engvall, 1997; Letts, 1997; Montecinos & Nielsen, 1997). No research studying feminization at the secondary level was found. The feminization of secondary school teachers may create consequences that differ from those at the elementary level. With Ontario statistics indicating that the feminization of the secondary teaching staff is, or soon will be, occurring (Giguere, 1999), this research fills a void by providing insight into women's teaching experiences during a period involving a significant decline in the number of men employed in secondary schools. What changes, if any, have women perceived in their teaching environment? How do the experiences of these women compare with those experiences reflected in the literature? Since the experiences of feminization as viewed through female secondary teachers' eyes is one missing from the literature, this study contributes new information to the body of research on the feminization of schools.

Organization of Thesis

In chapter two, research and literature relevant to this study will be presented. A description of the research methodology will be discussed in chapter three. This chapter also includes a description of the purpose of the study, the researcher's entry into the field, the ethical considerations addressed, the selection of subjects, the sample size, and the procedures utilized in the collection of data and its analysis.

In chapter four, the findings of the study will be presented. These findings reveal women who are thoughtful, committed to their chosen careers, and have no desire to pursue the administrative positions of principal or vice-principal. Despite teaching in a subject area considered to belong in the domain of male teachers, each of these women is perceived by administrators, parents, and, for the most part, students, as being very competent. All but one participant observes a trend toward the feminization of both their schools and their Science departments. In addition, the participants note the following trends: a decrease in student enrolment within their schools, an increase in the number of girls pursing post-secondary Science, and an increasing number of disrespectful students. Participants also found that recent provincial government legislation has resulted in repercussions that impact on the school climate. These repercussions include an increased workload, increased isolation and stress among staff members, increased hostility amongst staff, a depressed atmosphere, apathy toward union and contract issues, a reduction of in-school administrative positions, introduction of unwieldy multi-subject departments, and unkept classrooms. For the most part, interaction between the participants and those they interact with when doing their jobs is positive. Some participants make a concerted effort to interact with colleagues and support staff. Each participant offered at least one instance where preferential or discriminatory treatment involving gender was involved. Balancing the demands of teaching with those of their families was a concern for several of the participants.

In the last chapter I will place the study and its findings in the larger context. The significance of the findings will be discussed and recommendations will be proposed.

CHAPTER TWO

Review of Literature

Introduction

This chapter presents a review of research on the feminization of education. The research is organized into two parts: 1) the feminization of education and 2) an inclusive school climate. Research presented in the feminization of education section is organized around several main concepts including the defining of the issue, the history of feminization, the loss of status associated with feminization, the psycho-social impact, the discourses held by female teachers, and the hidden curriculum. The research concerning inclusive school climates deals with open climates, factors that influence school climate, the role of the principal, and discussion of potential impacts feminization may have on a school's climate.

The Feminization of Education

Teaching, particularly at the elementary level, and increasingly at the secondary level, has become a feminized occupation. Feminization tendencies have been documented in many Western countries (Essen, 1999; Griffin, 1997; MacLeod, 1988; Prentice, 1990; Rots, Sabbe & Aelterman, 2002).

Defining Feminization. Prentice (1990) has maintained that because women have always taught, feminization in reference to teaching is a misleading term. Others, however, have defined feminization differently and consider changes in the ratio of females to males within the occupation. Wright and Jacobs (1994), for example, have maintained that an occupation is feminizing if the proportion of women workers within it increases. Similarly, Essen (1999) defined feminization as "the increasing participation of women in the profession" (p. 414). Williams (2002) defined feminization as "the numerical predominance of women over men and their concentration in particular sectors" (p. 2). Elementary education has become

feminized if one applies the latter definitions. In Ontario, there has been a steady decline in the number of male elementary teachers. Currently, for example, 25 percent of teachers qualified at the Primary-Junior level are men 55 years of age or older, while only 14 percent of all Primary-Junior teachers are men under 30 (Giguère, 1999, p. 45).

Stages of Feminization. According to Bradley (1993), there are three stages occupations pass through as feminization occurs and the sex-type of an occupation changes. These stages include infiltration, invasion, and takeover. Infiltration occurs when a few women enter a male occupation. If large numbers of women enter an occupation while men are still involved in it, then invasion has occurred and the occupation has become integrated or gender-neutral. The final stage, takeover, occurs when an occupation becomes perceived as women's work and men leave or stop entering the occupation. Feminization may stop at any of the three stages.

History of Feminization. Elementary schools have a lengthy history of feminization. Prentice (1990) asserted that, historically, much of the early teaching done by women took place in the home as private schoolmistresses rather than in the public sphere (p. 128). During the colonial and industrial periods, however, women were welcomed into the profession because men often were not available or chose not to fill the positions, and because women worked for less pay than men. In Hamilton, Ontario, during the first half of the nineteenth century, for example, the hiring of women made it possible for the local school board to operate multi-grade schools. As Prentice (1990) noted, large numbers of women teachers were hired instead of men because the board could divide schools into classes or grades and save money at the same time. While women have numerically dominated the teaching profession in Canada since the 1800s, they have neither been treated equally nor have they dominated administrative positions (MacLeod, 1988).

Vaughn-Roberson (1992), who discussed feminization of elementary schools in the United States, asserted that women were initially accepted into the teaching profession because of a "nineteenth century ideology of domesticity that made women custodians of home and morality." Teaching was viewed as an extension of women's role in the home.

In Ontario secondary schools the majority of teachers have been male. This majority has slowly eroded. For example, while seventy percent of secondary school teachers were male in the 1980-1981 academic year, that figure had dropped to 58 percent by 1992-93 (Ontario Ministry of Education, 1993, p. 16). More recent statistics indicate that "male teachers with Intermediate-Senior qualifications have dropped to a low of 33 per cent in the under-30 age group, from a high of close to 59 per cent in the 55 and over age group" (Giguère, 1999, p. 45). Giguère (1999) maintains that the massive wave of retirements of men in the 55-years-and-over age category will result in even fewer men in secondary schools (p. 45).

Loss of Status associated with Feminization. Some researchers have found that feminized occupations lose status and become negatively stigmatized, and that this has economic repercussions for the occupation. DeCorse and Vogtle (1997) and Giguère (1999) noted that, historically, certain occupational phenomena occur when the gender ratio in an occupation favours women. For instance, wages paid to those in the profession often decrease. Men may move into different jobs, such as administration, or they may create new jobs with higher status. Wilson (1992) noted that once an occupation is culturally stigmatized, it is difficult to attract men back to it. This may have been because men who chose to enter a feminized occupation have been perceived as stepping down in status. While teachers' salaries have increased, they are still low in comparison with those in other occupations that require similar university and college education (Giguère, 1999; Williams, 1992). American researchers such as Apple and Jungck (1990), DeCorse and Vogtle (1997), Griffin (1997), and

Kaufman, Westland and Engvall (1997) argued that the low salaries currently paid to teachers indicate that teaching is already undervalued by society. Hodson and Sullivan (1990) noted that elementary school teaching has been classified as a female semi-profession rather than a profession. MacLeod (1988) feared that the increase in the number of women and the decrease in the number of men entering Canadian teacher education programs, in addition to the exodus of male teachers to administrative positions, further devalued teaching as a profession and, as a result, has reduced teaching "to a low status female ghetto" (p. 34).

The Psycho-Social Impact of Feminization. Researchers have studied the feminization of the occupation of teaching from a variety of perspectives. Some have examined the reasons why men would become elementary school teachers. Others have focused on the structural advantages men encounter upon entering a feminized occupation, or the corollary, the structural impediments encountered by women when they enter a male-dominated occupation.

Researchers studying the feminization of teaching often focus on the under-representation of men at the elementary level. To understand the phenomenon, some researchers have examined the psycho-social considerations that influence male elementary teachers' decisions to enter teaching. DeCorse and Vogtle (1997), for example, interviewed eleven new male elementary teachers about attitudes and perceptions in entering elementary education, motivation for career choice, public perceptions of teaching, and sense of professional efficacy. They found that the feminization of elementary teaching has had some impact on male elementary teachers' career choices. While these men choose to become teachers, participants were concerned that they might not be taken seriously in their social lives because they worked with six-year-olds. The fathers of some of these men initially considered teaching an unchallenging or inappropriate career choice for their sons. As a consequence of the stigma attached to the occupation of male elementary teacher, most of the men in the study

did not decide to become teachers until they were adults, and often only after working in a related occupation.

Bradley (2000) also studied the impact of feminization on the career choices of male elementary teachers. He found four main themes. The first was that each of the participants entered teaching because they liked kids. The second theme, identified by three of the men, was that, in their opinion, elementary students would be easier to teach. Two of the men identified a third theme in their choosing to become elementary teachers later in life. The fourth theme, identified by "a few"(p. 169) of the male participants, was that teaching elementary school was perceived as a temporary or transitional job. The two participants who chose teaching as a second career choice stated they had worked "in the real world" (p. 169) prior to entering the elementary pre-service program. The latter finding suggests that, for many men, elementary teaching is not perceived as a real occupation.

In a quantitative study of 390 elementary teacher education students attending a mid-western American university in the fall of 1995, Montecinos and Nielsen (1997) found that male and female students entered the program to have direct and nurturing contact with children. They also discovered that 39 percent of the males entered the program with the goal of teaching for only a few years and then moving into administrative positions. Fewer females shared the goal of moving into administration, with the percentage declining from 21 to 13 percent as the women advanced through the three-year teacher education program.

Coulter and McNay (1993) examined seven men's perceptions of their work as elementary teachers as they began their careers. As in Bradley's (2000) study, each of the participants stated that he chose elementary teaching as a career because he enjoyed working with children. In addition to enjoying working with children, these men became elementary teachers in order to provide alternative career role models for male elementary students, to

provide an alternative career choice for men, to contribute to a non-sexist society, and to provide an environment conducive to boys' learning. Each of the men reported trying to model a liberal masculinity, but that "the organization of the school, the expectations of staff and students, and their own socialization as men made it easy to slip back into older, more familiar patterns of gendered behaviour" (p. 409). Each of the participants challenged the gender assumptions embedded in the elementary school organizational structure and in elementary teaching, only to be met with many contradictions because they were engaging in 'women's work' while trying to be 'real men' (p. 410). These men were puzzled when they were not immediately hired given what they believed was the publicized demand for male elementary teachers. Moreover, "their motives, abilities, and sexuality were ... often viewed with suspicion" (p. 410).

Once men have been hired into a female dominated occupation, such as elementary teaching, they frequently find structural advantages that enhance their careers. Williams (1992) named the structural advantage that fast-tracks men into more lucrative positions, or into administration, the *glass escalator* effect. She noted this phenomenon in a grounded theory study that examined the treatment of male employees in four predominantly female occupations - including elementary school teaching, nursing, librarianship, and social work. Token men experienced hiring and promotion advantages in these occupations. For example, when men were hired as elementary teachers they were quickly channeled by administrators, usually male, into higher stereotypical masculine positions in the profession – an action that often fast-tracked them toward administrative positions. Promotional opportunities were most apparent in those specialty areas with higher concentrations of women, such as kindergarten and primary grade teachers. Similarly, Schreiber (1979), and Baron and Bielby (1985) found that token men also enjoyed informal status advantages and greater authority and responsibilities.

Women, however, frequently encountered a *glass ceiling* that impeded their attempts at

promotion. While women resented the ease with which their male colleagues obtained promotions, their attitude did not result in a poisoned work environment, which was often the experience of women employed in male-dominated occupations (Williams, 1992, p. 260). Williams (1992) concluded that "men take their gender privilege with them when they enter predominantly female occupations ... [and that] this translates into an advantage in spite of their numerical rarity" (p. 263). The general public, however, often viewed both men and women in non-traditional occupations negatively. Men were seen as failures or sexual deviants, while women were not considered real women (Williams, 1992, p. 263).

Gender Discourses. Cammack and Phillips (2002) approached the issue of the feminization of teaching by examining the connection between teaching and gender. Eighteen participants were asked, "What does it mean to wear the labels 'teacher' and 'female'?" (p. 123). Investigating this question from a post-structuralist feminist perspective, they discovered the existence of two powerful gender discourses. They explained that discourse consists of "the normalized ideas and practices, the said and the unsaid, that constitute our knowing" (p. 124). Discourse is important because it affects one's definition of self and can prevent the creation of meaning beyond this definition. One discourse used by the women in the study emerged in the stories of why they became teachers. Females viewed teaching as acceptable women's work because women had an innate capacity for nurturing. Since teaching, especially in the primary grades, was perceived as a calling for women, it was considered an untraditional occupation for men unless they were using it to move into administration. The second discourse was that of patriarchy: Men were held in esteem while women were marginalized and silenced. Male teachers were preferred by parents because they were perceived as being better with discipline and principals were usually male. One participant related that her mentor teacher, a female, received phone calls from parents concerned she would be unable to handle

large classes, while the male teacher who had taught large classes the previous year had not received similar calls. Following an announcement that more male elementary teachers were to be hired, female participants in Cammack and Phillips' (2002) study wondered if "they were simply not as good as men" (p. 129). Cammack and Phillips (2002) stated that once a person became aware of his or her discourse, it could be transformed and the self reinvented.

Impact of Feminization on the Hidden Curriculum. The feminization of the secondary school teaching force is likely to influence a school's hidden curriculum, the unwritten component of the curriculum that is subconsciously transmitted to students (Haralambos & Holborn, 1991). The feminization of traditional male subjects, such as Science, for example, would demonstrate that women can excel in these areas, and this could motivate more young women to pursue careers in these areas. The presence of more female teachers in areas traditionally dominated by men could impact on the way that subject is taught.

Kahle (1989) found that students around the world, from primary students to teacher trainees, "hold a masculine image of both science and scientists and that this image probably detracts from a girl's interest and self-confidence in doing science" (p. 5). Sadker and Sadker (1994) found that "when girls look inside science classrooms, they see male teachers ... [because] less than one-quarter of high school science teachers are instructed by women" (p. 124). Moreover, Kahle (1989), has maintained that Science has been constructed from a masculine standpoint and has been taught in ways that seem to favour boys' learning. Sadker and Sadker (1994) also asserted that girls "participate less in science class, allow boys to take over lab equipment and watch male students conduct scientific demonstrations" (p. 124). In science classes, boys were found to speak louder and more frequently than girls and, when praising students, teachers tended to give boys more praise, constructive criticism, and help (Sadker & Sadker, 1994, p. 55). Sadker and Sadker (1994) asserted that girls perform better in

science when the teacher uses wait-time between teacher questions and student responses, utilizes collaborative group work strategies, incorporates interest enhancers such as puzzles, and allows the students to read and familiarize themselves with the material before discussions and demonstrations. Moreover, "when teachers bring women who work as scientists into the classroom, the impact is powerful and shows girls that science also belongs to them" (Sadker & Sadker, 1994, p. 123). The presence of more female Science teachers could, therefore, demonstrate to girls that they can succeed in Science at the secondary and post-secondary levels, and, perhaps, contribute to the teaching of Science in a manner more suitable for girls.

The feminization of secondary teaching could also have negative repercussions on the hidden curriculum. For example, male students seeing mostly female teachers in all subject areas, including those areas formerly dominated by male teachers (such as Science), might be discouraged from choosing secondary school teaching as a viable career choice. Leslie (2004) noted that "one way to encourage more boys to become teachers [was] to have more men in schools" (p. 1). DeCorse and Vogtle (1997) found that feminization at the elementary level did have an impact on male elementary teachers' career choices. They found that men often chose the career of elementary teacher later in life because female-dominated occupations tend to be stigmatized. Men choosing to become elementary school teachers often did so with the intention of moving into administrative positions (Montecinos & Nielsen, 1997).

An Inclusive School Climate

What impact would the feminization the teaching staff have on a secondary school's climate? School climate has been defined by Rafferty (2003) as "organizational climate with context specificity" (p. 52). Organizational climate is defined as "the quality of the internal environment as experienced by organizational members" (Rafferty, 2003, p. 51). School climate encompasses the interaction among the personalities of the principal and teachers within

the school's sociological and psychological framework, and establishes the tone "for the school's approach to resolving problems, trust and mutual respect, attitudes, and generating new ideas" (Rafferty, 2003, p. 52). Depending on the type of interaction among the principal and the teachers, the school climate can be open or closed. An open climate exists if teachers are willing to communicate to the principal about work-related school issues, even if the communication contains negative information (p. 65). An open climate is desirable because it facilitates trust. If trust is present, then communication between members involves less risk and defensiveness, and an environment is created in which other desirable outcomes are more likely because the members' commitment, motivation, confidence and perceptions are more apt to be positively affected.

How will an increase in female staff affect the dynamics of a school? A school's climate, or culture, is influenced by many factors. Chapman (2000) stated that the little details associated with school life impact on students' and teachers' performance and comfort levels and that this can, and often does, differ by gender. She stated that gender is important "in all aspects of a school, from salaries to dress code, from invited speakers to lunch menus, from wait-time and air-time in class to gender-proportions in departments, grade-levels, and leadership positions" (p. 26).

Schultz, Glass and Kamholtz (1987) maintained that a healthy school climate exists when "school personnel work together to create an environment that is productive, nurturing, positive, and supportive" (p. 432). It is important to develop and maintain communication that is open and non-repressive, and which involves trust, dignity, and caring between individuals. Since school climate is impacted by people, events and circumstances, what impact does the feminization of the staff have?

The school principal plays an important role in creating the school's climate. Codding

and Tucker (2000) asserted that a principal must be aware of the subliminal messages she sends. For example, the principal might state that the school's goal is improved student performance, but her actions may indicate that other goals are more important. Organizations subliminally communicate what is valued to its members: What is valued may be different than what is verbally said to be valued. Codding and Tucker (2000) maintained that answers to questions such as these show what the principal truly values:

> Which faculty members get praised for what kinds of actions? Who gets the plum assignments and who gets the dregs? Who gets to go on the special professional development trip and who does not? Who gets the extra resources and does not? (p. 50)

How the school's climate will be affected by a dearth of male secondary teachers is open to speculation. An extensive search revealed no research on the impact of having few male teachers on school climate. Will the principal favour male teachers if there are fewer of them? Will male teachers encounter the 'glass escalator' - structural advantages that will enhance their careers, as Williams (1992) discovered? Researchers have found that female teachers exert less of an influence outside of the classroom, and Gilbertson (1981) found that principals initiated more interactions about school policy with male, rather than female, teachers. Schmuck (1981) suggested this may be due to administrators, who - in the past - have usually been male, choosing to involve male teachers in discussions about school problems.

Codding and Tucker (2000) found that an effective principal employs a leadership style that is inclusive. The effective principal identifies a worthwhile goal and includes staff, students, and parents in its realization. This means that teachers impacted by the decisions are given input into the decision making process and are also held accountable for their implementation. What impact will a dearth of male secondary school teachers have on the school climate?

Conclusion

In this chapter a review of research on the feminization of education was presented. If one defines feminization as women entering an occupation, then feminization is not a phenomenon that applies to education because, as Prentice (1990) asserts, women have always taught. However, if feminization is defined as an increase in the ratio of women in an occupation, then feminization does apply to education. Few researchers have investigated the phenomenon at the secondary level, perhaps because women have not comprised a large majority of teachers at this level and the trend has not been considered a problem. Most research on the feminization of the teaching occupation focuses on the elementary level where it has been evident for many decades and where its impact is more easily studied.

DeCorse and Vogtle (1997), Giguère (1999), and Wilson (1992) have found that feminized occupations lose status and become negatively stigmatized. In feminized occupations wages often decrease, men transfer to jobs with higher status, and it becomes difficult to attract men back to the profession. Male elementary teachers in DeCorse and Vogtle's (1997) study were concerned that they would not be taken seriously in their social lives because they worked with elementary students. Often men become elementary teachers with the goal of moving into administrative positions (Bradley, 2000; Montecinos & Nielsen, 1997). Moreover, once men have been hired into a female dominated occupation, they frequently find structural advantages that enhance their careers (Wilson, 1992). Cammack and Phillips (2002) found that while women teachers perceived teaching as acceptable women's work because women had an innate capacity for nurturing, women often believed male teachers were more valued.

The presence of more female Science teachers may impact the hidden curriculum present in schools. Kahle (1989) noted that Science has a masculine image and has been taught

in ways that favour boys' learning. The presence of more female Science teachers could demonstrate that girls can succeed in Science at the secondary and post-secondary levels. Conversely, the feminization of secondary teaching could suggest to boys that the occupation of secondary school teacher is not an acceptable occupation for males.

What impact will feminization have on the climate of secondary schools? Gender, according to Chapman (2000), does impact school climate and is important in all facets of the school including dress codes, classroom procedures, and gender-proportion within departments and grade-levels. The school climate will be impacted by the subliminal messages sent by the principal's decisions and actions. Will the principal favour male teachers if there are fewer of them? Will male teachers encounter the 'glass escalator' that Williams (1992) discovered?

CHAPTER THREE

Methods

Introduction

In this chapter the design of the study is presented. The study's purpose and the two focus questions around which the study is based are introduced. My entry into the field, as well as the study's ethical considerations, the selection of subjects, and the sample size are all addressed. The participants are introduced. The chapter concludes with a discussion of the methods employed to collect, analyze and verify the data.

Purpose of the Study

The purpose of this study was to determine in which ways feminization of secondary school teaching has occurred. Women who were Science teachers in two northern Ontario school boards were interviewed about their teaching experiences. The focus questions included:

1) What were the experiences of women teaching in Science, a subject area traditionally dominated by men?

2) In the educational setting, how were these women treated by others?

Entry into the Field

Prior to beginning the study, approval to recruit participants for the study was requested from the boards of two school divisions in northern Ontario. Initially, a letter requesting permission to conduct the study was sent to only one Board in January, 2004 (Appendix A). Because five teachers were needed for the study and only three teachers agreed to participate, a second school board was approached in March, 2004.

Research participants were recruited from the larger secondary schools in each board. I sent a letter to the principals of the selected schools requesting permission to conduct research

in their school and outlined the purpose of the study (Appendix B). Because the number of responses from principals in the first school board was low, an attempt was made to increase responses from principals in the second school board by including an optional checklist-response letter that indicated whether there were female Science teachers in the school that met the criterion of 10 years' teaching experience and whether permission to conduct the study was granted (see Appendix C). Once written approval was received from these principals, I contacted them by telephone for the names of potential participants. In actuality, principals from the first school board only responded if they had a teacher who was interested in participating and they often included the name of the teacher with their response, whereas principals from the second school board used the checklist response form and sometimes responded even if they had no teachers who met the criteria.

Each of the potential participants were then contacted by letter. In one instance, I faxed the letter to a participant [1], but the others were sent by regular mail. The letter summarized the purpose of the study and ethical issues (Appendix D). Teachers interested in participating in the research contacted me by telephone or by e-mail. Each participant was mailed two consent forms and a stamped envelope addressed to me (Appendix E).

Ethical considerations

Each participant was required to sign an informed consent form which provided information on (a) the purpose of the study, (b) the treatment of confidentiality, including the use of a pseudonym, (c) the treatment of audio tapes and transcripts, (d) the known risks associated with the study, (e) the benefits of participating in the study, (f) the name, phone

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[1]In this particular instance the Principal recommended faxing the material to his teacher as this would accelerate the recruitment process.

number, and e-mail address of my thesis supervisor at Lakehead University, and (g) the voluntary nature of participation (Appendix E). Each participant mailed one signed consent form to me and kept the second form for her records. At the beginning of the first interview with each participant, ethical considerations were reviewed and permission was again requested to audio-tape the interview.

While it was my intent to ensure that the research did not contribute to increased participant anxiety and inconvenience by scheduling interviews during stressful times of the school year, participants from the second board were interviewed during the final weeks of the school year and had to contend with completing 'rigorous' course curriculums, making and marking exams, completing report cards, and preparing for graduation or commencement ceremonies while scheduling and preparing for each interview.

Subject selection and sample size

Participants were selected using criterion sampling. All but one participant was a currently employed, female, secondary school Science teacher with at least ten years' teaching experience. One participant in School Board A had nine years' experience. With the chosen time period of ten years' experience, I hoped that the participants may have taught long enough to have experienced the phenomenon of feminization. Ideally, I would have liked to have at least eight respondents express an interest in participating in the study so that the participants could have then been narrowed to five. I chose to interview the six participants who volunteered. Hatch (2002) asserted that beginning qualitative researchers need to find a balance between breadth and depth; by interviewing only six participants, I would argue that I was able to interview each one in greater depth than had I chosen a larger sample.

The Participants

The research participants were six female Science teachers from two northern Ontario school boards. Marlene, Carole, and Karen[2] were all employed by School Board A, while Laurie, Nancy, and Debbie all taught for School Board B. Each of these women had taught Science between 9 and 20.5 years (see Table 1). Occasionally some of them had taught in other subject areas as well.

Table 1

Statistical Background of Participants

	Marlene	Carole	Karen	Laurie	Debbie	Nancy
Years of teaching experience	20	9	20.5	18.5	17	17
Years teaching Science	20	9	20.5	18.5	17	17
Years teaching at current school	17	7 (French Immersion program)	18	18	2 (Previous school closed)	17

Marlene, 45, was a "second career" teacher who had worked for a major company prior to entering teaching. She had taught Science for 20 years – three of these in western Canada before moving to her current school where she had taught for 17 years. Of the seven Science teachers at this school, she was the only female. This married mother of two had taught all grades of Science. Besides teaching, she chaired the Strategies for Success program, sat on another committee, mentored approximately 25 students, acted as an associate teacher, and spent approximately ten hours a week between November and April coaching two teams. She

[2]To maintain confidentiality, names used for participant are pseudonyms.

was one of approximately 40 teachers, of whom 15 were female and 25 of whom were male (see Table 2). One of these teachers was her husband who also taught Science. Her principal was a female with limited principal experience, while her vice principal, a male, had held his position since Marlene began teaching at this particular school.

Carole, 49, was also a second career teacher who had taught for nine years, seven at her current school. With an enrolment of approximately 900, the school she taught at was one of the larger schools in School Board A. It was primarily an academic school and had a flourishing French Immersion program in which Carole taught. Counting the names on her phone list, Carole maintained there were 55 teachers; 27 female and 28 male (see Table 2). Administrators in the school were both new this year, including a female principal about 40 years of age, and a male vice principal in his mid-thirties. Carole was one of seven Science teachers, three of whom were female. On occasion, Carole taught in the English summer school as there was no French summer school offered in this board. She was very involved with Science Fairs and worked with students from schools all over the city to create Science projects for the Virtual Science Fair.

Karen, in her mid-forties, also taught in School Board A. She had taught for 20 years in the same secondary school as Carole. There were 52 teachers at this school; Karen stated that the ratio of female to male teachers was about half and half (see Table 2). Karen was the school's Subject Head for Science and prior to the board's restructuring of administrative positions in 1998, was the Science Department Head. She held Specialist Qualifications in Science and taught senior level Science courses. She had also coached a number of sports teams, focusing primarily on badminton.

Laurie, in her mid-forties, had taught Science for 18.5 years, 18 of them at her current

school in School Board B. This school had approximately 39 - 43 teachers and had an enrolment of about 650. Laurie maintained there were 39 teachers: 17 female and 22 male (see Table 2). The principal and vice principal were both males. There were six science teachers, four female and two male, employed here, but as a consequence of declining enrolments, all of the Science teachers were required to teach other subjects too. Although Laurie considered herself "the nominal Science Head" (I. #1, p. 36)[3], in actuality there was no longer a Science headship because the board had reorganized the administrative structure within its schools. Prior to having her children, Laurie spent ten years on the school's negotiating committee, several of these years functioning as the union's chief negotiator (I. #3, p. 132 and 138).

Nancy, in her mid-forties, also taught in the same school as Laurie. She had taught Science at this school for 17 years. She maintained there were 43 staff members, 18 of whom were female (see Table 2). In addition to teaching Biology and junior Science classes, she taught other subjects as assigned. She was also very involved with the Graduation Committee.

Debbie, in her mid-forties, possessed a Masters Degree in Science. She had also been teaching for 17 years, but because of redundancies and school closures had been teaching at her current school for only two years. Her current school was the largest in School Board B, with about 60 teachers and 1050 students. Approximately half the staff was female. The principal was a male, and there was one female and one male vice principal. Eleven teachers taught Science. Debbie was one of six female Science teachers. At her previous school, which had an all-female Science staff, she held the position of program leader, a position similar to that of department head. She currently taught senior Chemistry courses and occasionally a junior-level

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[3] References from each of the participants are labeled by interview and paragraph number. Hence I. #1, p. 36, refers to Laurie's interview #1, paragraph 36.

science. As the Students' Council staff advisor she attended their meetings and supervised their activities.

Table 2

Number of Teachers and Science Teachers on Staff, and Their Gender

	Marlene	Carole	Karen	Laurie	Debbie	Nancy
Number of Teachers on Staff	40	55[1]	52	39[2]	60	43
Ratio of Male to Female Teachers on Staff	25:15	28:27	26:26	22:17	30:30	25:18
Number of Science teachers	7	7	7	6	11	6
Ratio of Male Science Teachers to Female Science Teachers	6:1	4:3	4:3	2:4	5:6	2:4

NOTE:
[1] Both Carole and Karen taught at the same school but gave different numbers when asked to give the number of teachers on staff. This may be because one is including part-time teachers and the other is not. Their answers concerning the number of Science teachers on staff, however, do match.
[2] Similarly, both Laurie and Nancy taught at the same school and have given different answers for this question as well. As in the case of Carole and Karen, they do agree on the number of Science teachers on staff.

Data collection

Three interviews were conducted to gather the necessary data. The first interview gathered background information on the participant and focused on the ways she believed being a female teacher may have impacted on her career (Appendix F). The second and third interviews focused on the participant's experiences as a female teacher (Appendix G). The third interview also included any questions which had not been covered in the second interview

and also dealt with issues that emerged after the completion of the second interview with all participants. Any clarifications or questions emerging from a previous interview were dealt with at the beginning of the next interview.

The interviews were completed over the telephone and ranged in length from 30 to 60 minutes. Given the geographic distance of over 225 kilometres between the researcher and the participants, and considering that the researcher also taught full-time, the most practical interview medium was the telephone. Interviews were audio-taped, a duplicate audio-tape was made, and the data on the duplicate tape was transcribed within a week of the interview. To help ensure that each transcript was accurate and reflected the participant's meaning, each transcript was proofread immediately after typing. All audio tapes, computer discs containing transcript files, and transcripts were coded with a pseudonym and stored in a locked filing cabinet when not being used.

To encourage thoughtful replies, a copy of the interview questions was either mailed or e-mailed to each participant prior to each interview. After each interview, a copy of the transcript was either mailed or e-mailed to the participant so that she could have the opportunity to make necessary alterations and reflect upon her comments in preparation for the next interview. Only Karen requested that information be changed. This situation occurred because I had inadvertently mistyped self-deprecating as self-defecating. In another instance, Laurie felt it was necessary to clarify information she had provided regarding the Science teaching assignments within her school.

It was my intent to space each of the participant's three, semi-structured interviews seven to fourteen days apart in order to allow me time to transcribe each interview and to identify comments requiring clarification in the following interview. In four instances the

participants wanted to do two interviews in one sitting largely because of time constraints imposed by the ending of the school year.

Because I had to contend with a family emergency during the data collection phase of the study, no interviews were scheduled during the first two weeks of June. The remaining interviews were completed during the last two weeks of June, as I wished to complete the interviews before the participants began their summer vacations and to avoid the possibility of having to schedule interviews around participants' travel and vacation plans.

Scheduling interviews into May and June may have hindered the amount of reflection Nancy and, perhaps, Debbie put into their responses. As a member of her school's commencement committee, Nancy was busy planning commencement ceremonies when the first interviews were scheduled. She actually missed her first interview because of complications in commencement preparations. Her interview in June also coincided with the marking of exams and the preparation of report cards. She also had to plan interviews around her children's participation in sports activities. Nancy's interviews were shorter than those of other participants because her responses were often brief and she did not freely divulge much additional information, but this may also have been a reflection of her personality. Despite her busy schedule, she did read the interview questions prior to each interview. Many of Debbie's responses were also brief, to the point, and without a great deal of elaboration. However, since all Debbie's interviews lasted about thirty to forty minutes, and only one was scheduled at the end of June, it may have been simply that Debbie was not very talkative.

Laurie's last two interviews were also scheduled at the end of June and both were completed in one sitting. This did not appear to affect the quality of her responses as she had read the interview questions prior to the interviews and had prepared answers. Her responses

were very detailed. At the conclusion of this lengthy interview she was content to chat at length about various topics.

Data Analysis and Verification

The data was analyzed manually without the assistance of computer analysis software. Although all transcripts were read throughout the data collection process, the actual analysis of the data occurred after all the data had been collected and all transcripts had been typed (see Appendix H). The analysis did not begin immediately, as the transcripts were set aside for a couple of weeks. When I was ready to proceed, two tables were constructed to organize the participants' background data (see Tables 1 and 2). This data included the following: name of school and school board, number of students, number of male and female teachers and Science teachers, years teaching experience of participants, gender of principal, and gender and number of vice-principals.

Each transcript was read through twice to aid reflection. Terms and phrases that summarized the participant's responses were jotted in the transcript margins. Many of these terms and phrases formed the basis of the codes which were subsequently created. Data with similar content were identified with the same code. A total of 43 codes were identified. Some concepts which emerged at this stage included altruism, coaching, competence, equality, importance of family, gender's impact, mobility, and team player (see Appendix I). Some of these codes were used as themes when the data was reorganized into larger units.

I realized that the analysis of the data would be simplified if the transcripts could be cut apart so that coded material relating to similar themes could be physically grouped together. To aid me in locating the source of each comment once it was cut from the transcript, each transcript was reformatted and the interview number was added to each response. This meant

that all transcript clippings included the participant's pseudonym, the interview number, and the paragraph number (see Appendix J). The coded transcripts were then reread, cut apart, and sorted into 26 themes. Many of the descriptive phrases selected to describe each theme mirrored the question being asked. Some of these themes included the following: perceived hiring advantages, promotional opportunities, competence, career aspirations. preferential treatment, interaction with parents, and trends. While most clippings were sorted by question, the procedure enabled relevant comments from other questions and interviews to be grouped together. The sorted transcript clippings were paper-clipped together and each group was labeled with its theme, enabling me to locate theme-related data quickly. Once I began the writing process, the search function in the word processing program was utilized occasionally to locate relevant quotes quickly.

To help establish trustworthiness in the study, member checking was employed by having participants check over their transcripts for accuracy and clarity of meaning. Participants were satisfied with their answers as transcribed. Only one participant requested that information be changed. The researcher asked participants to clarify any ambiguous material either during the interview or in a subsequent interview. To further establish trustworthiness, detailed, thick, rich descriptions from the transcript data were also incorporated into the study. Creswell (1998) asserts that thick, rich descriptions contribute to verification as their presence "enables readers to transfer information to other settings and to determine whether the findings can be transferred because of shared characteristics" (p. 203). The interview process also yielded a saturation of data: Participants repeated information and elaborated on previously discussed material. Finally, accountability was achieved by maintaining an audit trail which outlined the research process, the chronological evolution of codes and categories, and the researcher's pre-entry conceptualizations.

CHAPTER FOUR

Presentation of Data

Introduction

This study was designed to investigate in which ways feminization of secondary school teaching has occurred. My plan was to interview five female secondary school Science teachers, from one northern School board, who had had at least 10 years' experience in teaching Science. The plan, however, required modification as only three participants volunteered from the first school board approached. Two other women contacted me by e-mail, but decided that they could not invest the time needed. Consequently, a volunteer with only 9 years' teaching experience was accepted as a participant and a second school board was approached. In the end, six women with teaching experience ranging from nine to 20 years were accepted as participants.

The two focus questions around which the study was organized were: 'What are the experiences of women teaching in Science, a subject area traditionally dominated by men?' and, 'In the educational setting, how are these women treated by others?' This chapter is organized to answer these questions.

Experiences of Women Teaching in Science

One of the aims of this study was to investigate the experiences of women teaching in Science, a subject area traditionally dominated by men. Since Ontario statistics have indicated that feminization has been occurring within secondary schools, I was interested in learning if these women had witnessed the phenomenon in their schools and Science departments. The responses of the participants have been organized around several themes which emerged from their interviews. These themes include changes in staff composition, perceived competence, team players, unwieldy new departments, more girls pursuing Science, the impact of family, and teaching styles.

Changes in Staff Composition

Each of the participants remarked on changes which had occurred during her career. Some of these changes involved the composition of the teaching staff and included declining student enrolments, an increase in female teachers, and male teacher retirements.

Declining Student Enrolment. Several trends in the number of teachers and in the ratio of male to female teachers within schools and Science departments were observed by the participants. Five women specifically noted that declining student enrolments had contributed to a smaller teaching staff within their respective schools. Karen, in her first year of teaching, was aware that the school she was employed in was slated for closure the following June: Students were leaving and the enrolment was dropping (I. #1, p.139).[1] Of her current school, Karen, the Science department head, maintained that her department "[was] smaller now than it [had] ever been" (I. #1, p. 32). This was confirmed by Carole, who taught in the French Immersion program at the same school. Nancy and Laurie, who taught together in a different school for 17 and 18 years respectively, stated that the student population at their school had shrunk from about 1200 to 650, resulting in a reduction of teaching staff from about 70 to the current contingent of about 41.[2] Debbie, the teacher most negatively affected by declining enrolments, made no reference to the decline in student enrolment or the corresponding reduction of teachers. She had been declared redundant several times and had been forced to relocate to different schools to keep her job. In describing her experience, she stated,

> Well at the beginning [I switched schools] because I was redundant to the school. Well actually, the first two years I was redundant to the board and so I

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[1]References from each of the participants are labeled by interview number and paragraph number. Hence I. #1, p. 139, will be found in Karen's first interview in the 139th paragraph.

[2]Laurie stated there were 39 staff members while Nancy maintained there were 43. I have averaged these numbers to get 41.

> got rehired again in August. Then the next couple of years I was redundant to the school, so I got moved around, shifted around quite a bit. And it wasn't, I guess, until my fourth year that I stayed at the same school and didn't get a letter in June. (I. #1, p. 84)

Debbie was currently teaching in her seventh school, after her previous school was closed two years ago.

Declining student enrolments also had other repercussions. Laurie and Marlene asserted that it was not uncommon to find Science teachers teaching in other subject areas; teachers had to be much more versatile now. Marlene noted that because her school was 'downsizing,'

> the last Science teacher hired is now doing Special Ed. We tend to hire Science people a lot, and they end up teaching in other subject areas because we never need to hire Science teachers. We have lots of Science teachers elsewhere out in the other courses. (I. #1, p. 37)

Indeed, the need to be more versatile had affected these women, too. Five of them stated that they had taught subjects other than Science, with Karen and Marlene teaching Physical Education, Laurie teaching Math, Carole teaching Math and Family Studies, and Nancy teaching Family Studies and English. Different course assignments meant an increased time commitment in terms of additional preparatory work. Nancy, who was currently teaching an English course which she had never taught before, stated that she had read the material over during the summer, but still the workload was very heavy.

> The [preparation to teach the course] is heavy. It requires an awful lot of time. It was an English course and the marking, of course, is horrendous. Between the actual prep and the marking, and keeping up with the other stuff too, it was a pretty heavy workload. ... I knew I'd be having that course last September so I read the material over the summer. But still, it's one thing to read it and something else to actually present it to the class and to find how to do it creatively. (I. #3, p. 98 and 100)

Increase in Female Teachers. Another trend observed by five participants was the increasing number of female teachers within their respective schools. Five observed this trend in Science while two also saw it occurring within the whole school. At Debbie's previous school

more than half the teachers were female. She attributed the number of female teachers on the staff to the female principal who seemed to hire mainly females. When Debbie first began teaching at her previous school, there were three male Science teachers on staff. However, an all-female Science department was created at the end of her first semester when all three male teachers retired and were replaced by females. It was Debbie's experience that Math and Science teachers were now predominantly female whereas these subjects were once predominantly male (I. #1, p. 50, 54, 58 and 60).

> At the school I came from [the staff] was predominantly female. ... I find especially in Math and Science it seems to be where it used to be predominantly male, it is now predominantly female. I came from a high school where we, [the Science teachers], were all female.... [There were] five of us. ... When I first started [teaching] there, ... [in] my first semester there ... were three males and they retired at the end of the first semester. The replacements were all females. (I. #1, p. 44, 50, and 54)

Laurie witnessed similar developments and maintained that in her school the last three teachers who were hired in the Science area were all women. One was hired about five years ago and two more were hired approximately two years ago. This did not mean that no men were ever hired, as Laurie continued to say that this past semester two retiring female teachers in the English and French departments were replaced by men (I. #1, p. 9). Carole made similar observations and stated that "if you look at the ratio before there were ... mostly men. Now there's me and [another woman] that's been added as females, and the [number of] men [has dropped] (I. #1, p. 26)." Karen, who taught in the same school as Carole, observed that "Science has definitely been primarily male, although in this school it's had a history [of having female Science teachers]" (I.#1, p. 179).

Marlene did not witness similar trends. One of seven Science teachers, she was the only female Science teacher remaining at her school since the female Science department head retired three years ago. New teachers hired at her school tended to be men; Marlene did not know if

this was because females were reluctant to apply for teaching jobs in the rugged ex-mining community or because the male candidates were those best qualified for the available positions.

Male Teachers Retiring. Sometimes the women in this study attributed the increase in female teachers to male retirements. Debbie noted that after her first semester of teaching, three male Science teachers retired and were replaced by women (I. #1, p. 54). Similarly, Nancy stated that four or five years ago two male Science teachers retired and were replaced by women (I. #1, p. 64 and 66). Marlene asserted that a 'whole bunch' [of male teachers] retired around 1995, and [that] there [were] three upcoming male retirements (I. #1, p. 143). Math and Science heads at Carole's school were now female because the men who held these positions had retired (I. #1, p. 30). Finally, Karen stated that her department had retired four males, and had downsized (I. #1, p. 69).

When senior teachers retired, it opened the door for teachers with less seniority to teach senior level subjects. Laurie, for example, found that even though she was the only staff member with an honours degree in Biology, she was only able to teach Biology after an older male teacher retired. That same retirement also enabled a male colleague to switch from teaching the Ontario Academic Credit [O.A.C.] Biology to Physics (I. #2, p. 9 and 13).

> I'd been teaching the mixed, the general Science courses in [grades] 9 and 10, as well as the grade 11 Biology. I'm really the only one that actually has an Honours Specialist in Biology. His is in Environmental Science, but he'd been teaching [O.A.C. Biology] for so many years they just let him keep on teaching it. I didn't get my first O.A.C. Biology until just before the curriculum change [in 1999]. So now I'm doing the grade 12 Biology. This is the senior course [now that OAC credits have been abolished]. (I. #2, p. 13)

Changes in school demographics provided challenges and opportunities for the women Science teachers in this study. These challenges and opportunities ranged from surviving redundancy and school transfers to moving into headship positions.

Perceived Competence

Since science has traditionally been perceived as being in the domain of male teachers, I was interested in learning if these women had ever faced situations where their competence was questioned by others. I discovered that participants' competence in their subject matter had never been questioned by administrators, peers or parents, but one participant noticed that students were beginning to do so.

Competence Acknowledged by Peers and Administrators. Karen, who possessed an honours degree in Biology, never had her qualifications questioned by administrators and colleagues. When she first began teaching, she admitted she was nervous because of her shyness, but she was confident with the subject matter. She knew her Science background was strong as she had completed many difficult university Science classes in order to prepare her for work in the field. Prior to becoming a teacher, she had completed biology-oriented contract work for the federal and provincial governments. Confidence in her abilities became evident when she was hired for the positions of Assistant Department Head and then the Department Head of Science early in her teaching career. She found that because she taught professionals' children, there was more interest in her credentials. These parents sought her out as a tutor when their children encountered problems in other Science classes. In terms of attitude, Karen noted parents were "appreciative, sincere, [and] relaxed" (I. #3, p. 42) toward her. Karen asserted,

> I've never been questioned on anything [in terms of my competence]. I had one parent [who was a teacher], ... phone me this week and ask me to tutor a student that's not mine. ... I spent an hour with the student on Tuesday morning going through some chapters she'd missed because a parent had died and she got behind and didn't feel that her teacher was approachable [and] just wasn't learning from him. So [the parent] was just so appreciative, "Thank you so much for doing this. Thank you. Thank you." That's the community. They will ask me for those favours. So, I think it's positive. I've never had a run-in with a parent, I don't think, ever. (I. #3, p. 42)

Karen's students also acknowledged that she was very competent in her subject matter. They were confident that Karen was teaching what they needed to learn to succeed in university because she made it a point to discover what was being taught in different university Biology courses.

> [Students] see me as very competent – in terms of my subject matter. [They are] very comfortable that they're learning what they need to learn, [and] that I know my stuff. Especially in this new curriculum [and with lots of new teachers, [the students] have had a lot of different things thrown at them. I don't think they've ever really doubted that I know what I'm doing. So, [the students are] ... very confident with me. (I. #2, p. 19)

Students frequently approached her for university references. Some of her students also expressed concern that she was underemployed because they believed she was overqualified to be a teacher (I. #3, p. 99 and 101). Teaching was not a career Karen had planned to pursue when she completed her degree in wildlife biology. Consequently, she enrolled in many difficult courses and electives. Reflecting on her decision to become a teacher, she asserted that teaching has

> been a good job for me. I think it's where I belong. I think I denied [teaching] for the same reasons as my students [feel I'm underemployed]. I probably felt I was under-employed. I wouldn't have done the degree I did with super hard courses to do this. I could have been equally competent and had a life in university. Like I never, ever partied because of all the bio-chemistries. I'm not a real natural student, so I had to work very hard. I just wouldn't have pursued that stuff, like land policy courses. My electives were very difficult. But I was trying to make sure I was employable in my field. (I. #3, p. 113)

Holding a masters' degree in Chemistry, Debbie was never questioned about her competency by administrators, peers, or students. However, she conceded that sometimes teachers did get parents whose children had low marks who would question everything, but that such parental complaints were directed at teachers in general and were not gender specific (I. #1, p.124, 126 and 128; I. #2, p.18).

Similarly, Nancy's competency was not questioned. She maintained that a teacher's gender was unrelated to competency. With regards to students, she was quite capable of answering their questions. On occasion, however, her students did ask questions which she could not answer, but in these situations, she would admit to the class that she was not sure of the answer and would suggest that they do some research on the issue. She commented that this procedure has resulted in some good discussions (I. #2, p. 24).

Laurie was not questioned about her competence as a Science teacher, either. In fact, her former and current Directors of Education were very impressed with her managing of a summer school program and made a special trip to visit it. At that time Laurie was single-handedly teaching Grades 7, 8, and 9 Math and English classes (I. #1, p. 71).

Perception of Competence Related to Age. Carole, who entered teaching after raising her family, planned on completing her Science Specialist qualifications. Like the other participants, she was never questioned about her competence. As a new teacher, she felt she had an advantage over younger, new teachers, because of her age – students presumed she was an experienced Science teacher.

> I had one advantage over younger teachers. I was older, so kids didn't know I just came out of school. So there was no question about me being a Science teacher, or anything like that until I told them that I had just gone back to school and that I had just started [teaching]. ... [Students] respect older people. They figure they've been there a long time. So, I didn't go through that. (I. #3, p. 54)

Reflecting on the issue of age, Laurie believed that if the new teacher's competence was questioned, it was because she was young, not because she was a female.

> When you first start teaching it's trial by fire until you gain your own confidence with your students and the parents, especially when you start when you're young. I don't know whether it was gender related or not, I think it was just plain ordinary youth. You look awfully young and you haven't had very much experience as a teacher. (I. #3, p. 8)

Laurie recalled early Parent-Teacher Nights when she used to have many parents come to see her. However, with experience, she realized that whenever she taught grade 9 Science, there would be many parents visiting on Parent-Teacher Night and that it had nothing to do with her competence: Parents of Grade 9 students would always want to know how their child was adapting to secondary school.

Nancy also discussed the impact of a teacher's age on her perceived competence. She stated that, at her school, a female Science teacher with two or three years' teaching experience was having difficulty with parents. Complaints were being made that she could not manage her classes and their children were failing because of her.

> There's this other [young female] colleague [with two or three years teaching experience] that seems to be getting dumped on by the parents and they're saying that she's not managing the classes well, and their son or daughter is failing because of her.... I'm not sure if other staff members would have the same response from the parents or not. (I. #3, p. 49)

Part of the problem, Nancy asserted, was because this teacher taught large Grade 9 and 10 applied-level classes that were difficult to teach and motivate. Many of these students had difficulty with the new curriculum and were a challenge to teach, and often, Nancy claimed, it was younger teachers who were given these classes.

Competence Questioned by Students. Marlene's competence as a Science teacher was not questioned by administrators, peers or parents, and until this year, not by students either. For some reason two boys in her current Grade 12 Biology class were asking questions like, "Are you sure that's right?" and "How do you know that" (I. #3, p. 58)? Marlene also maintained that beginning in Grade 11 students commonly begin to question everything (I. #2, p. 13). While she was glad her students did question her, and while she was trying to teach them how to do it appropriately, Marlene wondered if the questioning by the Grade 12 boys was because she was the first female Science teacher they had encountered in high school. Her husband, who taught

Science in the same school, had not experienced the same situation. Since she was one of the few teachers on the staff who was a pure Science graduate, she found it annoying that these students questioned her but would not think of questioning some of the "big strapping men" (I. #3, p. 58) who have taught Science in the past but have university degrees that include Science only as a minor concentration.

> I have a couple of Grade 12 students and I'm the first female Science teacher they've had. I haven't had them in Grade 9, 10, and 11. ... They say, "Well, are you sure about this?" I say, "Well, yeah, I am." "Well, how do you know that?" "Well six years of university will get that through to me." ... There are only a couple of us in our Science department who are pure Science grads. A lot of [Science teachers in this school] took Science as a minor [in university] and they're big strapping men ... but [the kids] would never question them. Because it has more to do with size - perceived athleticism, I think, or I don't know. But this is the first year I've run into it in my years of teaching. (I. #3, p. 58)

Marlene thought the Guidance Counselor's suggestion that the staff include their credentials on the graduation program would alleviate student questioning of teachers' credentials (I. #3, p. 64).

It was also Marlene's experience that some students perceived male teachers' courses were harder and, therefore, better. She asserted that,

> [i]f I [am] teaching a course along with my male counterpart, they always say his course is harder. I guess that annoys me sometimes. We're doing the same things; we just have different ways of teaching the material. Where he's very rigid and gives them a thousand homework assignments a week, I don't do that. I'm more global in my presentation. But they seem to respect [the male's approach] more sometimes. "It's really tough and I'm having a hard time getting it done, therefore it must be better." (I.#2, p. 13)

Other than the above instances, students recognized Marlene's competence in teaching Science.

Each of the participants was perceived as being competent in their subject matter by their administrators, peers, parents, and, for the most part, students. Only Marlene's competence was questioned by a pair of senior level, male students.

Team Players

In describing the type of teacher she would hire for her Science department, Laurie desired someone who was a "team player" and who would become actively involved in the school's extra curricular program.

> ... we try to run, even with only having 30-some staff, ... a full extra-curricular activity with pretty much every sport except for football. You know – hockey, soccer, basketball, volleyball, badminton, skiing, curling, and golf, as well as having a chess club, Reach for the Top, etc., etc., etc., etc. We try to do a lot of different things. The administrators always tend to ask people about their other experiences, their other areas of expertise, because they're looking for people who'll be contributing to the whole school community, not just their qualifications. ... Who do they suspect would be more involved in the extra-curricular program? That's a big thing. (I. #1, p. 103)

Karen made similar comments about newly hired teachers at her school. She asserted that since many coaches had retired, administrators were hiring teachers who had coaching abilities or who were willing to participate in other extra-curricular activities. Karen saw these teachers as team players – teachers who were young, energetic, involved and well-rounded.

> They [are] ... young and energetic and involved. They're just good self-starters and they're resilient people. They bitch less. I think it's . . . something to do with the physical stuff ... – they have more stamina. You say, "Can you teach this, Careers?" And they say, "Okay". There seems to be that kind of ability among these young people. And to be honest, I notice it too. Even within my department .... If you hire someone who's just there to teach Science they're less likely to enjoy the other aspects. I think it's fair to say that [administrators] see [them] not just as Jocks but – in an interview they would come across as a bit of a pleaser, more well-rounded. It's not just the sports. It's, "Can you help out with Students' Council?" ... They say, "Sure." They're more likely to be a team player or a contributor. (I. #1, p. 51, 52, 54)

The moniker, team player, accurately described the women interviewed in this study, as they actively participated in many facets of school life. The moniker, team player, encompassed the dedication shown to the students in their classes, the mentoring of students and student teachers, and their involvement on school committees, extra-curricular teams and clubs, and union committees. While some might contend that these activities are all part of a teacher's job,

some of these women went that "extra mile" in doing more than what was expected.

Carole certainly went the extra mile. In addition to spending time afer school helping students, she also shared her phone number and e-mail address with students so they could contact her at home if they encountered difficulties in completing their science homework. As a student, Carole worked hard, so she realized some of her students would have difficulty, too. After marking tests she analyzed them: What did the students do well? What did they not understand? How could she teach the concept differently so the material would be clearer? What tricks could be used to help students comprehend? She noted that her students required diverse instructional methods, so she thought of alternative ways to convey her material. She conceded that this dedication meant she did not get weekends off. Nor did she get two months off in the summer since she often taught summer school. To advance her Science background, she enrolled in university courses and then shared the knowledge from these courses with her students. Carole maintained that the men who taught Science at her school did not put the extra effort into ensuring their students understood the material. She believed that her male peers did not

> spend as much time to really make [students] understand [the material]. They just [taught] it – it [was] a job.... Well — let's just say I have [had] a lot of kids that [would transfer] from one class [to my class] so they [would not] have to go with a male. (I. #1, p. 218)

When she discussed her involvement in science fairs, Carole became very excited; she worked with students who participated regionally, nationally and "virtually" - on the Internet. Twice a week for two hours a night, and for a weekend or two prior to the entry deadline, she met with students[3] from schools across the city to design virtual science fair projects which could be viewed on the Internet. Being the only teacher in her community who worked with students on

[3]This year it was 29 students, but the number varies each year.

this activity, she dealt with both French Immersion and non-Immersion students. She was very successful, with her students having won many prizes.

Teaching in the French Immersion program meant that Carole often taught the same students for several consecutive years. Her students were comfortable with her and would stop her in the halls or drop into her classroom for advice. Carole thought that sometimes she was "being too much of a mother with them, but it [was her] nature and it [did not] go away just like that" (I. #3, p. 176). She dealt with their problems in a professional manner.

> If they have problems with a teacher and they come and talk to me about it I will turn it in a way that they have to look at themselves too. I'll never put another teacher down. And I think that's very important. ... I'll say, "If you need help with your work or something, you can come. You know I'm always here, so just come by. There's no problem with searching for tutors." And they might come once or twice. And you know what? They don't come back. It's as if they just need a little bit of confidence and then they're fine. (I. #3, p. 180)

She maintained that she had more and more students coming and asking for advice.

Carole wondered how teachers with families coped with the workload. She was able and willing to invest the time that she did in teaching because her children were now adults. However, if she had children still at home, she could not do all that she did now (I. #3, p.134, 136, and 138).

To provide tutorial assistance to students, Karen arrived at school before 8:00 a.m. Frequently parents contacted her to arrange tutorial assistance for their children who were in her colleagues' classes. Maintaining a professional approach, she only tutored these students after they had contacted their own teacher for assistance. She was often in the school during the evenings as she coached a sports team. She regularly chaperoned dances, and, in the past, ran a Science Club and an Environmental Club.

Being the Students' Council's staff advisor required much of Debbie's time. Supervising

Students' Council activities meant she regularly chaperoned school dances. She was one of about ten staff who regularly did so (I. #2, p. 22, 26, 30, 32).

Marlene, in her words, was a busy lady. To ensure her senior level students obtained experience working in a university setting, she regularly scheduled trips to the labs and libraries of two neighbouring universities. Since Marlene made lab work an integral component of her classes, she often arrived at school early and departed late. On the day of one of her scheduled interviews with the researcher, she had been at school from 6:00 a.m. to 6:30 p.m. It had been a short day – classes were shortened and students dismissed at 12:30 to facilitate teacher participation in professional development activities during the afternoon. The staff had had a working lunch and had spent the afternoon discussing education issues. Marlene was annoyed that some colleagues – the "golden boys' club" as she called them — did nothing while those sitting on committees made presentations. She was also upset that these privileged people left school early, contrary to the principal's instructions that everyone remain until 4:00 p.m., while she had remained until 6:30 p.m. arranging a field trip and bussing for another teacher, and digging soil pits in preparation for her next day's class.

> I've been stewing about that all afternoon because I didn't get home until 6:30 and I had [to] phone [a local company] representative and order buses for the field trip. And, I'm not even teaching Grade 10 Science. I'm just doing this because we want to get the students environmentally aware. So I just don't get it. I don't understand. And they, [the Golden Boys], don't sit on any committee. So we were sitting in this meeting and all these people were up presenting and the people who don't have big planning jobs are not doing anything. (I. #3, p. 144)

Marlene, who suggested that she was a little motherly, was actively engaged in mentoring both students and teachers. She described herself as an approachable, non-threatening person who sometimes did not get out and about because she spent her lunch period and after school mentoring about 25 students.

> The kids often will use me as a mentor because I'm not threatening. That's what I meant by motherly. I often see them several times a day, because they come in with a problem, or whatever. So they take my role as a teacher beyond sometimes.... I often spend my lunch hours and after school with students, and so I don't get out and about sometimes. (I. #3, p. 5 and 9)

She still corresponded with some of her former students through e-mail. She made arrangements with four of her former students who were enrolled in university Science programs to visit her current classes. While the school mentoring program was voluntary, staff were asked to participate in it. However, Marlene asserted that members of the golden boys' club did not mentor. Elementary students knew her because she once ran an elementary school "Girls in Science" program; consequently about a dozen elementary students approach her for help with their science projects. When circumstances allowed, Marlene also served as an associate teacher to student teachers wanting to practice teach at her school.[4]

Marlene coached two different sports teams, an action that required about ten hours of her time weekly between November and April. She also ran an environmental club in which she and her students, with the assistance of Ministry of Natural Resources staff, dug soil pits, toured old growth forests, radio-tagged turtles, and engaged in other similar activities. In the past, her students competed and won in environmental competitions. They had not competed within the last two years because the costs were too high and many of the students had other commitments.[5] Marlene became frustrated because she had trouble obtaining funds to operate her environmental club which had been successful for years, while members of the golden boys' club were always given money for their programs.

We have this very elite sort of group in our school. They're all young males –

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[4]Marlene was an associate teacher this year. To be an associate teacher, there must be a student teacher who wants to teach in your community and in your subject area.

[5]To compete, the students must travel, and this costs money.

> they're 35 and under – that get first choice to do all sorts of things. Like, they need money for their group to do something. Well, they'll get it even though I might be struggling to get Envirothon money to do that. For years I've been running the Envirothon, being successful, winning, but their programs seem to get [the money]. They know how to network better, I guess, than we do. But they always seem to come out on top. (I. #1, p. 179)

Somehow, Marlene also found the time to chair the 'Strategies for Success Committee' – a committee which met weekly, operated an after-school homework program, and did remediation work with Grade 9 and 10 students. During May and June she spent approximately 100 hours working with the Graduation Awards Program. Marlene was, indeed, a busy lady.

Laurie was also a very busy teacher. She served on the local Ontario Secondary School Teachers' Federation negotiating committee for ten years prior to school board amalgamation in 1997. For part of that time she was the chief negotiator. Now, with a young family, she found it difficult to balance her home life with her work life; she no longer had the same amount of time to devote to her work that she had when she first began. She remained at school until 5:00 p.m. or 5:30 p.m. almost every night, trying to accomplish as much as she could. What she did not get done had to wait until 9:00 p.m. when she was exhausted. She maintained there was not enough time to do everything she would like to do (I. #3, p. 76, 94, and 119). Laurie wondered if female teachers "[wanted] to please people too much, and [if they thought] sometimes that [they had] to make [themselves] go to exhaustion to make sure [they were] doing [their] job, [their] best job" (I. #3, p. 119).

Through their involvement in teaching, mentoring, and coaching, and in their participation on school committees, extra-curricular teams or clubs, and union committees, each of the participants demonstrated that she was a team player. Four of these women - Karen, Laurie, Marlene and Nancy - also balanced the demands of raising a family with their teaching commitments.

Career Aspirations

While each of the participants in the study demonstrated that she was a team player, none was interested in moving into the administrative positions of vice principal or principal. Two of them, however, had held leadership positions within their schools. Karen and Debbie had been Science lead teachers. Laurie was considered by the secretarial staff as the school's nominal head of Science.

Three participants had no desire to move into administrative positions, including those of department head or lead teacher. Nancy, for example, considered herself a classroom teacher and was not interested in becoming an administrator. She maintained that people were not interested in the new program leader positions because the new department groupings had become so large (I. #1, p. 72). Marlene, who loved teaching, stated that years ago, when the position of Science-Math Head was posted,[6] she did not apply because she, too, felt like a teacher and not an administrator. She firmly believed that excellent teachers should be kept in the classroom and that it was a shame that the only way for these teachers to excel was to move into administration (I. #1, p. 55, 71, and 87). Carole, who started teaching late in life, would not be able to retire until she was 65 years of age. Teaching late in life was fine with her because she loved being with the students. She had spent her life around children - raising her own and, later, operating a day care. The classroom was the only place where she felt comfortable. She had no interest in holding an administrative position, even that of department head, and disliked the politics associated with these positions, as well as the paperwork, the adjusting of marks, and the teacher evaluations. Why would she consider becoming a principal when she already had her dream job (I. #1, p. 175, 177, 179, 181, and 183; I. #3, p. 48)?

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[6]This was prior to board amalgamation and the reduction and/or elimination of department head positions as a cost-saving measure.

Debbie also insisted that she had no desire to become a principal or vice principal. She had, however, been a Science program leader, a position similar to that of Science department head, at her previous school before it was closed and she was transferred.

Karen currently held an administrative position within her school as the Science head, or lead, teacher. When she began her career, she viewed herself only as a classroom teacher, with no desire to pursue a leadership position. However, after being encouraged by her principal, she applied for, and was given, the position of assistant head, and later, the position of department head. While never having aspirations of becoming a vice principal or principal, Karen was very excited about becoming a department head because it enabled her to contribute to the school by participating in the decision-making process. Karen stated that

> [w]hen [she] originally went in [to the position of Science Department Head], [she] really was excited by it. No aspirations of Vice Principal or Principal or anything like that, but [she] did want to be a Head. [She did] want to be contributing, making decisions and being a part of that nucleus.... (I. #1, p. 112)

However, she still enjoyed teaching and intended to continue, as the following comments to some of her students reflected.

> I was telling the [students] about this because I usually give help at eight [o'clock]. I read them some of the questions [for this study]. ... "Where will I be in five years?" I took my stool and shifted it over three inches and said, "Right here." [Laughs.] I'll be in the same spot. It's not going to change, unless there's a school closure. Then I'm going to have my stool in a new location. I'll probably be a Head somewhere else. It's not going to change. (I. #1, p. 126 and 128)

If a Science/EQAO (Education Quality and Accountability Office) headship were to be created at her school within the next five years, Laurie would apply for the position, and thought she would have a good shot at it because she had recently become more innovative in using new technology. While there no longer was a Science headship in her school, she maintained that she

functioned as the nominal head of Science as the office staff placed materials addressed to the Head of Science in her mailbox. She had also attended some department meetings on behalf of the current EQAO (Education Quality and Accountability Office)/Math head while he was dealing with family problems. When it was advertised a few years ago, Laurie considered applying for the position of Science/Technology Coordinator for the whole school board, but it would have entailed a move. Being well settled in her current community, Laurie was not prepared to uproot her young family. Moreover, an exhausted male colleague, who was about five years from retirement, was interested in the position, so Laurie decided she would "let him have it" (I. #1, p. 45). The position, incidentally, was offered to a female teacher from a neighbouring city.

Although none of the participants aspired to become principals or vice principals, some were interested in assuming leadership positions within their schools. The leadership positions these women had held, such as lead teacher and department head, enabled the women to continue to work with students in the discipline of Science. Recent legislation in Ontario, however, contributed to a reduction of the leadership positions available within schools.

Unwieldy new departments

In the late 1990s, in response to provincial government funding cuts to education, both boards involved in this study abolished the traditional subject-based department structure for larger, multi-subject groupings. For example, prior to reorganization, the Science department at Karen's school was large enough to warrant both an assistant head and a head. Each subject, depending on its size, would have either a department head or both an assistant and a department head. Those teachers holding headships received a scheduled administration period in which to complete their tasks as well as an increase in salary. Now, subjects have been reorganized into a few large multi-subject departments under the control of a teacher who receives an increase in

salary,[7] but no scheduled time in which to complete his or her duties. If there were enough sections of a particular subject, a school might also have "program leaders," "lead teachers" or "head teachers"[8] for each of the qualifying subjects. A nominal salary increase accompanied each of these positions as well, but, again the program lead teacher did not get instructional time in which to complete her duties. The number of program leaders in a school was relative to the size of the school's student population: A smaller high school with fewer course offerings would have few program leaders, whereas a large high school like Karen's or Debbie's would have many.

In discussing administrative positions within the school, Karen, Carole, Laurie and Nancy made specific references to the reorganized leadership positions within their schools. They each noted that the type of in-school leadership positions to which teachers could now aspire to had been reduced and departments had been amalgamated into unmanageable units that no teacher wished to head. When she was initially hired, Laurie reflected, there was the opportunity for teachers to become assistant head and then department head as they acquired seniority and experience. In her school, some departments, such as math, had been large enough to warrant two assistant heads and a department head.

Laurie stated that with reorganization all the headships in her school eventually disappeared and were replaced by four leadership positions; no assistant leadership positions were created. Those holding the leadership positions received an additional $3,000 a year in salary, but no administrative time in which to complete their work. Being at a loss as to how to organize these positions, the administrators began clustering different departments together.

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[7]The salary increase was about $3000 per year.

[8]The terms used - program leader, lead teacher, or head teacher - were the titles given to the same position by the two different boards.

Initially Science was grouped with Math, and then with Math and Technology, and finally with "everything else except Math, English and Physical Education" (I. #1, p. 36). Each of these three subject areas formed individual departments. Laurie maintained this situation was ludicrous.

> Now, technically speaking, we don't have a head in the Science department. We are under the "everything else" except Math, English, and Phys. Ed. It's one huge group, [an] insane group. It's so insane that we're sort of being taken care of by the Math [leader]. He was hired as an EQAO/Math [head], really focusing on the EQAO tests. So he's been functioning as our "sort of head," not in name but in reality, [by] holding our meetings for us, taking in our receipts for petty cash, and things like that. Being a sort of pseudo-head. So there is no head of Science. (I. #1, p. 36)

"Nobody in their right mind" (I. #1, p. 42) wanted to be in charge of this catch-all department.

Similarly, Karen admitted that with the reorganization of departments within her school, teachers did not want the positions. The positions involved more work for no real benefit: There was no administration period, nor did they come with much money.

> There just wasn't a lot of reason to [apply for these new administrative positions]. I even said, if it didn't secure what I teach in my subject area – making me happy with choosing my courses and ... — being the person in charge rather than having to listen to the person [in charge] – you know, you're better off to be the idiot. And it secured [my job]. (I. #1, p. 112)

The other reason a teacher might apply for one of these leadership positions in her school, Karen divulged, was to prevent teachers from other schools from bumping people in the department.[9]

> I think that was a lot of it. People wanted to stay at this particular school, and so, "If you take [the leadership position], I don't get bumped out", and that kind of stuff. That's the big thing with Headships now. It's not people's burning desires to lead anymore. When I originally went in I really was excited by it. No aspirations of [vice principal] or principal, or anything like that, but I did want to be a head. I do want to be a contributing [member], making decisions and being a part of that nucleus, but I don't think it's that way now. I don't sense it is. (I. #1, p. 112)

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[9]A teacher might be wanting a transfer to a different school for a number of reasons. She might be declared redundant in another school, her school may be closing, or she may wish to transfer from one school to another.

While the opportunity to acquire headship positions had been reduced, Marlene observed that there were other opportunities for leadership that involved participating at a grassroots level. This involvement could include participating on committees and exemplar projects. With all the additional duties that have been assigned to teachers, however, Marlene wondered if accepting these positions and taking the extra work should be "considered advancement or craziness" (I. #1, p. 61). These positions, incidently, were not accompanied by a salary increase, but on occasion the teachers involved might be freed from class to meet together with other teachers as a committee.

More Girls Pursuing Science

It was the experience of the women in this study that girls were performing exceptionally well in secondary school Science classes and that many girls were pursuing science-related post-secondary programs. Debbie, Karen, Carole, and Nancy noticed that the number of girls in senior Science classes was surpassing that of boys. When asked about their perceived impact on their students, several participants believed they had motivated students of both sexes to pursue science-related careers, but as to whether their presence was responsible for girls' decisions to pursue these careers, they were not sure.

In both her current and former schools, Debbie found that girls had been out-performing boys in Science for a while; most recent award winners in all subjects, not just Science, were girls. Looking at her Grade12 College level Chemistry class list, she was surprised that it had fifteen girls and only two boys. Intrigued, Debbie studied the demographics for other Science courses, finding that "there [were] a lot of classes that [had], if not half, then more girls than boys" (I. #3, p. 64).

In their school, Karen and Carole found an increased number of girls taking senior level science classes. In fact, there were so many females enrolled in these science classes that the decreasing number of boys in the senior Science program worried Karen, especially when many

of these boys had done well in the grade 11 program.

> When I looked at the scholarship list just recently for our grads, ... there's lots of guys [that] ... were strong in the Grade 11 Science, but they didn't take Grade 12 [Chemistry, Physics, or Biology]. They're all in the Arts program. ... I'm not sure why that is. Some of them are musical, some of them are really good in English and History and are thinking of Law. But I know in our graduating class in the four years, they had to decide in grade 11. Maybe in the old days[10] more [students] chose Science just to keep their doors open, and now they're saying, "If I'm not top-notch in Science, I'll try for something else." The [students] are there, I'm sure the ratio [of high achieving male and female students] is fairly equal, it's just [that] a lot of the males are choosing to not be in the Sciences. (I. #2, p. 130)

Karen was not sure what the impact of her being a female Science teacher on her students has been. In terms of numbers, she asserted that she was obviously having a bigger impact on the female students simply because there were more of them. Since she did not teach Sciences at the junior level, she did not think it was necessarily because of her that more girls were taking senior level Sciences. She did continually tell the girls that they were hard on themselves because many girls thought they were not good enough to purse Science even with marks of 85 or 90, but she did not know what impact her action had on their decisions.

> I think I'm a good role model for the students. I'm always pointing out that girls are hard on themselves, they think they're not good enough for Science even though they've got 85 or 90s and the boys tend to be more relaxed about it. I really don't know [what the impact of me being a female Science teacher on my students is]. I can't tell if [the students] are affected by it. ... I have lots of students come back and say, "I'm in Biology now." They've talked about my impact or thank me for helping them or giving them ideas, but I think it's equal male and female. The only thing is right now I have so many more females in my class, obviously I'm having a bigger impact because there's more of them. But I don't know why I have more. (I. #2, p. 122 and 124)

Karen maintained she did have some impact, as many students - of both sexes - had pursued post-secondary Biology programs because of her. They have told her this, and have thanked her

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[10]By 'old days,' Karen is referring to the 'old Ontario curriculum' which was phased out in 1999. In the 'old curriculum' the academic program, which prepared students for university, was five years in length.

for helping them and providing them with ideas.

Teaching in the French immersion program, Carole also saw an increased number of females taking Science as optional courses. When she began teaching there were more boys in the Physics class and now the numbers of boys and girls is pretty much equal. She maintained that women needed encouragement to enter Science, even though they had the potential. The potential of women in Science was seen in her grade 12 university Physics class where the top students were girls. Carole believed the girls had the top marks because they worked harder at Science; they took notes and did homework, whereas the boys chatted in class and did not do homework.

Carole was aware that she had an impact on the decision of her students, male and female, to pursue Science in university. Many of her former students confided to her that she had helped them to enjoy Science.

> I have a few [students] that came back from university and they're in Science. We never thought they would be in Science. They come and say, "Thank you. You really made me like Science." I love it. ... And every year I have at least one that comes and says that.... So, I guess I'm having an impact that way. Make them like Science – that's the main thing. That's what I try to do. Make them like it – even if it's only for one year. (I. #2, p. 148, 150, 151)

Carole maintained that she had the same impact on both male and female students. Part of her impact involved turning students on to Science.

> I have just as many guys as girls that come and tell me that they didn't like Science before and they like it now. They're doing super at university, [but they realize] ... that they should have worked a little bit harder [when they were in high school Science classes]. Now they realize it. They talk about those things. (I. #2, p. 166)

Laurie noted that "girls [had] always done very well in Math and Science" (I. #1, p. 101) at her school. She asserted that, "very often when you look through [the names of] a graduating class, the Ontario Scholars [have been] mostly girls" (I. #1, p. 101). Laurie made a concerted

effort to discuss possible careers all students could attempt if they had a Science background. "Quite a lot" (I. #2, p. 84) of her female students have told Laurie that she had encouraged them to enter Biology related fields. Laurie also noted that she connected more with her female students.

> If there [are] people dropping out of a course at the beginning of the year, it tends to be more – maybe it's not true, but I perceive it to be – more [boys] that drop out than girls. I don't know necessarily whether that's me or just the subject. Usually I end up with more girls than guys in the class. (I. #2, p. 84)

Unlike Nancy, Debbie, Karen and Carole, Laurie did not find a larger proportion of girls enrolled in the senior Sciences. While she tended to have more girls than boys in her Biology class, she could get a class with equal numbers of both sexes, or she could get one with hardly any girls or hardly any boys – depending on the timetable.

At Marlene's school the Science department had been compiling statistics on male and female achievement in Science since 1994. According to these statistics, girls were not being left behind in Math and Science, as has been the common perception.

> We're compiling statistics about that: How it used to be where girls were always left behind in high school for Science and Math, and now they're not. Have we got the reverse thing going now? So, ... we've taken it upon ourselves to look at those kinds of statistics ... in our department. I mean, why is it that our boys are not achieving like they used to? Have we gone or swung it so far the other way? (I. #1, p. 247)

Top marks in the school's senior science program were held by three girls and one boy. In Marlene's grade 11 Chemistry class, the top student was a female, but right behind her was a young male. This scenario was duplicated in her grade 12 university level Biology class. In her son's grade 10 Science class, the top five students included three girls and two boys. Marlene wondered if teachers' deliberate attempts to incorporate examples from a wide range of topics rather than from a more narrow engineering or science background was benefitting the girls, or if they were performing better because they had had some female role models.

Marlene's experience was that not all boys performed poorly in Science. In a subsequent interview, she noted that the distribution of top marks between male and female students in Science was "fairly fair" (I. #2, p. 5). She maintained that, by the senior grades, boys were contenders for the top marks and that perhaps this was because by the senior grades school had become more meaningful for boys or because they knew what post-secondary avenues they wished to pursue. Reflecting on her own high school experience, Marlene recalled that the top mark contenders in her Science classes had been split fairly evenly between the sexes: "I was trying to think back to my high school years. Were the boys stronger than the girls? I don't remember that being so. I remember it was fairly equal (I. #2, p. 5)." Marlene considered herself a good role model for her students. She asserted it was important that students have both male and female role models in all of their subjects.

While Nancy acknowledged that many of her female students had entered Science fields, she was not sure what role she had played in that decision as other factors had come into play. While she admitted it would be nice to think she had encouraged others to pursue Science related jobs, she really did not think a teacher's gender was important in encouraging girls to pursue Science. She stated, "I really don't know that having female staff is really making that much of a difference. If they really want a certain career, I think they will go for it (I. #2, p. 101)." Besides having female Science teachers, her female students had previously had male Science teachers, and they had also attended workshops that exposed them to various engineering careers. Debbie, however, disagreed. She believed that her presence in the classroom indicated to students that Science was a viable pathway for them to pursue. Having had a female shop teacher, she stated, would have made more of an impact on the males, though.

All participants except Laurie noted an increase in the number of females enrolling in Science courses. All participants asserted that females often held top marks in Science classes

and were, therefore, performing well in Science. The participants thought they had had an impact to some degree on this development. Karen and Laurie also believed that their presence in the classroom demonstrated that it was possible for females to have both a career and a family.

Impact of Family

Throughout the course of data collection, five of the participants made reference to some aspect of family. Issues that arose concerned the difficultly involved in balancing the demands of teaching and family; the impact of family on career aspirations and educational opportunities, and teachers having to assume more parental responsibilities. Two of the participants perceived men to be able to better balance family and teaching demands.

When asked how they perceived themselves as role models for students, two participants incorporated some reference to family in their responses. Karen, for example, believed she illustrated to her students that being a mother was important: "I'm also a mother and they know about my children; they know that it's a big part of my life. They know that I'm crazy about my kids..." (I. #3, p. 98). Karen's students were aware that after much preliminary work, Karen was accepted into a prestigious Masters' level program, but she decided not to pursue it. When her students asked her how she could have made such a decision, the importance she attached to her children was evident in the answer she shared.

> Well, I told my family at the dinner table. I looked at their faces. I saw the reaction on my daughter's face. I said within the same breath, "but I won't be going." ... It was based on my family. ... There were more important things at that point in my life to not spend [time pursuing an additional degree]. They sacrifice all year with my marking, [and by] giving up stuff. They sacrifice. ... I had to see their reaction to know, and I just denied myself. (I. #3, p. 103)

Karen, a self-professed story teller, often shared similar stories with her students.

In response to the same question, Laurie believed she exemplified the balancing of a full-time career with that of family. She kept a picture of her family on her desk and would

occasionally talk about balancing work and family with her classes. Laurie maintained that government legislation that introduced a new curriculum, additional teacher duties, and reduced preparation time, made the task of balancing work and family even more challenging. Most nights she remained at school until 5:00 or 5:30 p.m. trying to accomplish all that she could, before she went home to her husband and young children. What school work did not get done by the time she left had to wait until her children were in bed, because Laurie wanted to spend time with her family (I. #3, p. 76, 83, and 94).

> When I was newly teaching I didn't have any children, I was able to put more time into it. Now I have two young children. I want to spend more time at home with them and so I have to try to get as much work [finished] as I can before 5:30, before I come for supper. ... I don't have any time after supper until about 9:00 to do any thing [school related] and by that time [I'm] bushed. So it's a little bit of a struggle from that point of view – trying to balance that out with your workplace. I don't have enough time to do everything that I want to do in the day and that includes my family life and my work life. It's stressful from that point of view. (I. #3, p. 94)

The balancing of work and family was also complicated by aging parents who might develop health issues. Laurie asserted that she had "a whole life although sometimes I don't feel like I have a whole life. Sometimes I feel I might as well just put a cot in the hallway at school" (I. #3, p. 95).

When discussing how recent government legislation had increased teachers' workloads, Nancy observed that teachers no longer had time to socialize and often retreated into their own corners at lunch time and during preparation periods to work. Managing work and her family, she conceded, was "really, really difficult" (I. #3, p. 92). Her strategy was to finish as much as she could at school because it was just too difficult to take it home. At home, she helped her children with their homework, and while her girls were self-motivated, her boys were not and needed to be coached through their homework.

> [T]ime is so valuable, you have to work through it all and people tend to go into

> their own corners now to get the work done. With families of course it's difficult. I try to get done as much as I can get done at work, because I just find that it's too hard to come home. The kids have their own work to do. Luckily my girls are self-motivated, but the boys tend to need to be coached through their work and I just find it really, really difficult. (I. #3, p. 92)

Of the six participants in the study, arranging interviews with Nancy was the most challenging as her schedule was hectic. Monday evenings were soccer nights. On one occasion Nancy, who was also a member of the graduation committee, forgot an interview because she had had to drive into the local city for a new printer so graduation programs could be printed.

The heavy demands of teaching were also acknowledged by Carole and Marlene. Carole, who analyzed her tests, planned lessons to accommodate diverse student needs, and supervised student involvement in a variety of science fairs, asserted that she currently had trouble maintaining a social life and could not image how the teachers who had families coped. Because her family was grown and she lived alone, she was willing and able to put forth the effort that she did. Her weekends, she asserted, consisted of marking. Even on those weekends when she traveled out of town to visit her mother or friends, she took her marking.

> I have trouble to have a social life. I raised my kids – my kids are gone. I'm by myself and I think, "Oh my God." I can't imagine the ones that have a family. I don't know how they do it. .... I'm alone so it's, you know, I'm willing to do it. But the other [teachers]? If I had a family I wouldn't be able to do what I'm doing now. ... The [demands of] marking – my weekend is marking. When I go to [another city] I bring my marking with me. Everywhere I go, I have marking. (I. #3, p. 134, 136, 138)

In addition to chairing a school committee, organizing field trips, coaching, preparing labs, and all the other facets associated with teaching, Marlene had two children with busy lives and a husband. As a role model for students, Marlene noted that she was not good at modeling self care: "I need to teach myself to take more time for me – I'm not a very good model that way. I probably do too much" (I. #3, p. 178). Philosophizing, she said women were afraid to say, "No, I've done enough" and that they tried to be perfect at home and in their careers and

community. She, herself, needed to say no more often and to start taking care of herself. She was considering coaching only one team next year instead of the two she currently coached. Her husband quit coaching this year and she believed it was time for her to do the same (I. #3, p. 196).

Responsibilities that have traditionally been considered the responsibility of parents and family, Marlene noted, had increasingly been assumed by teachers.

> [Now, we are] having to get kids ready for all aspects of life. I think we take on that role a lot as compared to the family taking on some of that role when I first started. So that's made the teaching environment different – having to be disciplinarian, drug counselor, career counselor, and all that kind of stuff. I didn't do as much of that in my first years' teaching [in another province]. I think the family did more of that. But it could be that my community is very different here. (I. #3, p. 188)

She wondered if the number of single families in her current community had contributed to this change.

According to Laurie, family had also had a subtle impact on her career. Laurie had been reluctant to pursue administrative type jobs in the past because of the impact such jobs would have had on her family. Within her new amalgamated school board, the acceptance of such a job might have resulted in the relocation of her young family, in long commutes to work, and loss of job security. When asked if being a woman had hindered her career, Laurie stated

> Maybe in only subtle ways. I guess, probably more because ... of my family more than anything else. I'm the primary breadwinner, if you like, and I've wanted to provide a stable environment.... So. I don't take a lot of risks. I really enjoy a lot of stability. I want to stay put. The idea of picking up – we were just talking about this today – about going into administration – one of the younger female teachers who they have been encouraging strongly to do that. If you become an administrator you have to be willing to go way across to the other side of the board. You pretty much either have to commute for a couple of hours or move, and things like that. And if you've got a young family, you're dragging them all over the place. (I. #1, p. 57)
>
> You wouldn't want to be winter driving, that sort of thing. You'd pretty much have to move right near where you're working, if you're serious. You

> know in Northern Ontario, it's just one of those things. You've got a small family you don't want to be dragging around. (I. #1, p. 59)

Because she valued security and stability, Laurie was unwilling to consider administrative positions.

Marlene and Laurie both thought men did a better job of separating the demands of teaching from family life. Marlene, for example, stated that when the men went out as a group, they rarely took school with them. When asked what the male Science teachers might talk about if they went out to lunch, she replied,

> Oh sports, and they rarely take school with them. But that's a male thing. They can separate that more than females can, I think. That's just the nature of the gender differences, I think. (I. #3, p. 172)

Laurie also believed men were better able to separate family and work. At 5:00 p.m. Laurie and the other female Science teachers were still working, while the men went home much earlier.

> I find that they're able to balance more of their home life with their school life. At the end of the day the men are gone home, it's just the women [left at school]. We're sitting there, ... we're still there, we're working away. We work till 5:00 or 5:30, ... and it's always us. It's very rarely that any of our male colleagues are anywhere in sight. (I. #3, p. 115)

Marlene provided an example of a young male colleague who did little in the way of extra-curricular assignments and whose wife had just had a baby. He was having trouble balancing teaching and his family life and accused his colleagues of not knowing what it was like to have children. Marlene, who had taught and coached with two young children at home, had little sympathy for him (I. #3, p. 192 and 194).

Teaching Styles

I was interested in discovering whether the participants believed a difference existed in the teaching styles of male and female Science teachers. The participants involved in this study each exhibited diverse classroom management and teaching styles. These styles varied according

to the grade and level of students being taught, the subject matter, student interest, and teacher preferences.

In terms of classroom management Debbie conceded that her junior level classes considered her a "dragon lady" because of her strict discipline, whereas she was more lenient with her senior Chemistry classes and had established an excellent rapport with them.

> I'm really, really tough with my junior classes because you have to train them. But by the time they're in grade 11 we have a pretty good rapport, but still I'm very strict with my expectations.... They know what I expect and they know what the consequences are if the expectations aren't met. But I feel that with most of my students there's a mutual respect there. (I. #2, p. 12)

Carole firmly believed that by showing students respect, discipline problems were minimized. She was also willing to adjust school rules if doing so would promote student learning.[11] Laurie, however, advocated maintaining a professional, firm attitude and enforcing school rules. Laurie asserted,

> keep it professional, but yet firm and confidential and they seem to respond very well to that. I like to have fairly firm parameters of what's expected and all the rest of it. So, they know. I don't spring things on them too much. They respect that. They also respect my experiences and education and so they're willing to ask a lot of questions, so we have a lot of good discussions going on. (I. #3, p. 40)

Laurie also maintained that her manner was "cordial, friendly, [and] respectful" (I. #1, p. 40). All women insisted on maintaining a professional boundary between teacher and student.

With respect to teaching styles, Laurie preferred to use a mixture of teaching strategies and activities during a Science class.

> I like using diagrams; I will occasionally use overheads for pictures and diagrams.... I like to have lots of discussion. I believe in homework. I do give homework questions mostly in the form of reinforcing what we've talked about in class, making sure that they've covered the main concepts.... I like to

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[11]Carole, for example, would allow students to listen to their disc-mans in class, provided they turned them off when she was teaching. The school rule was no disc-mans in class.

> mix up hands-on activities with talking and reading, so I'll break up the class with short activities, or we'll do a longer activity with a preparation and then with a wrap-up at the end. So I try to work that in. I try to give a mixture. (I. #2, p. 79)

Because she disliked writing on the chalkboard, Laurie encouraged her students to participate in discussions and to write brief notes. Recognizing that literacy was important, Laurie spent more time reading textbook passages and discussing the content and jargon contained in those passages.

> Recently, in the last couple of years, there's been more of an emphasis on literacy. So we sometimes read a passage together, then discuss what it means, go over the vocabulary. This is for all grades as well. I firmly believe that if you can't read it you don't really know what it's saying. There are so many words in Biology that are so complex that I need to know whether they're understanding what they're reading and so do they. So I find I'm doing a lot more reading out loud. (I. #2, p. 79)

Carole strongly believed in showing her students respect. She praised them for their efforts and disallowed negative talk. Emphasizing that "no question [was] stupid" (I. #2, p. 9), Carole encouraged students to ask questions because "if they [missed] the basics they [couldn't] go on. [They'd] have trouble all the time" (I. #2, p. 9). Her classroom atmosphere was also relaxed.

> The seats are so uncomfortable in Science – those little stools. I had ... one parent who said, "I don't know what you do, but my kid loves coming to Science and he hated Science before." ... Then she said, "You know he told me he was laying on the floor to do his homework."
>
> I said, "Well, that's what he chose. He preferred to lay on the floor and do his homework instead of sitting on the stool. So, as long as he's doing his homework, I don't care." ...
>
> [A] few more asked me [if they, too, could lay on the floor to work] and I said as long as it doesn't get out of hand. But not the whole class did. Only three, I think, did it. But that's the way they would work and believe me it worked. They would do their work. They didn't disturb anybody and if I had made them sit down they would disturb. (I. #2, p. 17, 19 and 20)

If students did not hand in assignments, Carole would request them from the students whenever and wherever she encountered them, even outside of class. If students left test questions blank,

she would return the test until the student had attempted all the questions.

> When [students] have a test – no blanks [are allowed]. If they have a blank I give it back to them and I say, "Try. Always try. You know sometimes you think you're wrong, but it doesn't matter. Maybe you've got half the marks. (I. #2, p. 24)

Carole varied her teaching methods according to student interest. Her teaching methods were "very flexible" (I. #2, p. 122) and sometimes included movement and laughter to retain student attention.

> If I find they're all falling asleep I'll jump on the desk, if I have to. I'll do anything to get their attention. And they think it's funny. And if I get mad I'll even say [a funny phrase] and they love it. ... [Then] they [will] just start laughing; it brings them back to attention and then they're back on listening. I try not to make it too serious because it's boring. If I find they're getting bored I'll do something else, just to distract the class a little bit, [like] make them laugh. Also, if they laugh at me they don't laugh at the other students. I'm fine with that. (I. #2, p. 122, 124 and 125)

Students enjoyed Carole's teaching methods and sometimes rearranged their timetables so they could be in her Science class.

Nancy also attempted to gauge her students' interest and varied her teaching methods accordingly. Whenever possible, she would use practical examples to make her lessons more meaningful.

> I try to make it as relaxed as possible. I try to gage the interest of particular units – how interested the kids are with it. I tend to try to draw from practical experiences and I try to bring in some everyday stories to try and interest them, and some of them really enjoy that. (I. #2, p. 93)

Marlene also incorporated practical examples into her lessons in an attempt to make them more "global" (I. #2, p. 13). Students in her classes participated regularly in lab-work, in and outside the classroom. For her university-level students, she arranged regular field trips to neighbouring universities in order to provide them with laboratory and library research experiences in a university environment.

Karen's teaching strategies varied according to the grade and level of students being taught. She relied more heavily on the lecture format when teaching university-level senior classes.

> [It's] primarily teacher-directed, from the front of the class on a wooden stool with the overhead. But it's a lot of Socratic questioning, open-ended thinking, critical thinking – "imagine this...", or a lot of theoretical work trying to get them to think things through.... [We] still do some seminar work and independent studies and interviews and all that stuff [in the university level courses], but primarily the teaching itself is teacher-directed, lecture style, question and answer. (I. #2, p. 98)

With senior level college classes – classes that she often did not teach, Karen was more apt to use group work, projects, and seminars. She also employed a visual teaching style that incorporated "colour coded explanations" (I. #2, p. 98) and required her students to add lots of colour to their handouts. Karen stated,

> [I] use of a lot of colour on the overheads. So when I'm teaching something like [the] electron transport chain, I'll colour things with matching colours. Like I'll show the flow electrons with one colour, the flow of protons with another. So, it's often taking a black and white handout and emphasizing things. So, it's a lot of colour. So [the students] know to come into my class with colourful stuff. They have a lot of optional bonus assignments that are based on colouring books that are given out at university that are colour by number – because it's a visual learning style. (I. #2, p. 100)

She asserted that when students finished her class, "their notes [were] pretty nice" (I. #2, p. 106) and that they would "have a complete set of notes that they [could] take away to university" (I. #2, p. 108).

Debbie also utilized the lecture format when teaching senior level chemistry classes. She preferred a structured teaching style and the lecture format enabled her to teach all the material in the curriculum. She did not use group work and projects in her university-level classes.

> I'm very structured.... Teaching Science I don't do a lot of group work. So it's a lot of – like I teach the lesson, they do activities or labs, they do assignments. It's not wishy washy. There's not a lot of self-discovery, especially at the senior university level. There's more self-discovery at the college level, at the applied

> level. But for the senior university level we don't have time to self-discover. We have to get through this stuff. (I. #2, p. 56)

When the curriculum was less demanding, Debbie was more comfortable incorporating group work and projects into her applied-level and senior level college classes.

As stated earlier, I was interested in whether the participants believed a difference existed in the teaching styles of male and female Science teachers. Only Marlene believed that there was an evident difference. She asserted that she was process-oriented and, therefore, viewed Science as a vehicle to teach students how to become life-long learners, unlike her male colleagues, who she perceived viewed the content of science as being more important (I. #3, p. 3). The other women did not think a teacher's gender had any impact on teaching style. Carole, for example, did not believe there was a difference between male and female teaching methods; instead she believed that, "Everybody [was] different – whether ... male or female" (I. #2, p. 139). Karen did not perceive any difference between teaching styles of male and female teachers, either; she asserted that the teaching style varied according to the subject matter and its level of difficulty. Thus, according to Karen, Senior level Physics teachers were the most disciplined and Biology teachers the most relaxed.

> I think it doesn't depend on the sex because we have male and female Physics teachers, now that's French and English, but I still think when I see them doing their teaching, even a female tends to be more disciplined in Physics than [in] Chemistry or ... Biology ... or [when teaching] Grade 9 - 10. It's more the subject that determines the style rather than the sex of the teacher. So the same teacher teaching Chemistry or Physics, the attitudes seems to be different. (I. #2, p. 115)

Karen asserted that her teaching style was less relaxed when teaching Chemistry than when she taught Biology, and that, if she taught Physics, her style would be even less relaxed (I. #2, p. 116 and 118). Debbie also believed that the course material, the grade level, and the course level influenced the teaching style.

> ... the grade 9 Science teacher, who happens to be male, ...does lots of demos and

> lots of hands on things. And that's what you should be doing with grade 9s. So, I do some demos, but ... when it comes to 3U [university] and 4U you just don't have time to do too many fun things.... The kids know coming into Chemistry that it's a tough subject, and they realize that it's going to be a lot of work, and that it's not a wishy washy course. There's a lot of material that they have to cover and they have to be serious students if they want to do well. (I. #2, p. 65)

Nancy and Laurie both asserted that they were unable to respond to this question with accuracy because they really had not had the opportunity to sit in their colleagues' classes. However, Laurie did think that she insisted on fewer board notes than any of her male or female colleagues. Nancy asserted that all Science teachers had found it challenging to teach all the material outlined in the new curriculum.

How are These Women Treated by Others?

The second question around which the study was focused investigated how these women were treated by others. Participants responded to interview questions dealing with their relationships with administrators such as principals and vice-principals, fellow teachers, parents, and students. Several themes emerged from their responses, including loss of student respect, staff interaction, interaction with parents, and discrimination and prejudice.

Loss of Student Respect

An integral part of all teachers' work involved interacting with students, and each of the teachers interviewed maintained they had a very good rapport with their students. Despite this good rapport, however, two teachers, Debbie and Laurie, spontaneously commented on the changes they had observed in student respect toward teachers. To some degree the change in attitude was most noticeable among applied level students, although Marlene also noted the trend in her university-level grade 12 Biology class when a pair of boys recently questioned her knowledge. Karen and Carole, the two women who taught predominantly academic and university preparation classes, did not observe any change in student attitudes toward staff.

When asked what changes she had observed over the course of her teaching career, Debbie focused her response on changes she had observed in her students. She asserted that students who were very respectful still existed, but generally speaking, students had become less respectful of themselves, of others and of teachers. Debbie asserted that students had become too worldly and that they knew too much. She asserted that

> they come in knowing the rules and knowing the law, and they know that they can get away with practically murder. And they try. They know too much. They do. ... They are old beyond their years. (I. #3, p. 120)

Laurie, although she knew it sounded like a cliché, agreed that students today were less respectful, and that they had become more cynical. A young colleague recently remarked to Laurie that the students had changed over the course of the ten years when she was a student at the school.

> I know it's a cliche, but I do feel that the students are less respectful. I don't know if less respectful is a good term, but they seem to be more individualistic – which is a positive thing. But they've gotten a lot more cynical, I think, than they were twenty years ago. I know my younger colleague said, "When I was in high school here ... I would never have done that!" So even she has noticed since she's been here about ten years ago that there's been a change in adolescents in general. (I. #3, p. 16)

Despite the general change in student attitude, however, Laurie stated that her students respected her experiences and education, and willingly asked questions that took advantage of her knowledge.

While students did challenge both male and female teachers, Nancy found some male students seemed less respectful to younger, female teachers.

> I'm seeing it more with the newer female staff. It seems like some of these – especially some of the male students – they seem a little less respectful to these younger females. (I. #1, p. 110)

However, other than this comment, Nancy did not make reference to any changes in student respect.

Marlene made no direct observations about a change in student respect, either. However, she shared two incidents which could be interpreted as a lack of respect. The first, mentioned above, occurred this past year when a couple of senior level boys questioned her Science knowledge base by asking "Are you sure about this?" and "Well, how do you know that" (I. #3, p. 58)? Marlene, who had majored in Science, believed these boys would not question some of the male Science teachers who had minored in Science at university, and, therefore, did not have full Science degrees as she did. The second incident occurred last year and involved a frustrated, angry student throwing a book that hit her in the head. Marlene contended that she just happened to be at the wrong place at the wrong time, and the student was mad at another teacher – a male Science teacher. The student was not one of hers, although she was assisting him with Chemistry homework during an after-school homework class.

Both Carole and Karen taught in a school that was viewed as an academic school: The children of many professionals attended it. Carole, who firmly believed in showing her students respect, did not notice a loss of student respect for teachers. Carole's students, however, were primarily academic- or university-level students, because the French Immersion program was only offered at the advanced and university levels. Similarly, Karen, who generally taught senior-level university courses, made no comments about a loss of respect. Karen's students respected her and approached her for assistance and references. Karen found, however, that students in her current grade 11 college course were providing her with interesting scenarios in terms of attendance and skipping, but it was nothing that she could not handle.

Staff Interaction

Each participant perceived her interaction with her peers, school administrators, and support staff as being positive. All the women interviewed attended staff gatherings outside of school. Marlene, Nancy, and Laurie discussed how recent provincial government education

policies contributed toward teacher isolation. Some participants provided examples that suggested staff relations were not always harmonious. Examples of disharmonious behaviour involved the favouritism of some teachers by administration, administrator inflexibility, teacher aloofness to support staff, and staff alienation. A couple of examples in which recent government education policies had affected staff interaction were also provided.

Relationship with Peers. Each of the women involved in this study indicated she had a positive, amicable relationship with her peers. Adjectives employed to denote this relationship included friendly, polite, cordial, respectful, professional, and fine. Laurie had praise for her colleagues. She maintained that they co-operated well and pulled together well when they needed to work toward a common goal. She had had opportunities to move to other schools in the past, but decided to remain at her current school because of her colleagues. As she stated, "it's so important to be able to work with people that you can get along with, that don't add to the stress of the job. Overall, it's been a really good group to work with" (I. #2, p. 42).

Some participants made a conscious effort to interact with their colleagues. Marlene maintained that one of her strengths was that she had a very collegial relationship with all departments, and that she worked to maintain this relationship. She stated, "I think that of all the staff, I work to make sure I connect with all the departments all the time" (I. #3, p. 160).

> I think that one of my strengths as a person is that I interact with all the teachers from all the other departments. Like, if my students came into my class and said, "Oh, this is a really neat thing we're doing in English class," I'll go and talk to the English teacher and say, "Wow! This is really fascinating." I try to keep it more collegial rather than try to hide in our little departments. But our staff isn't like that. We don't tend to interact with each other during the day. But I tend to be able to interact with everybody. I think that's just because of who I am. I think that we probably need to work on that more – across curricular. (I. #2, p. 30)

In the fall, she volunteered to assist the English Department when they prepared students for the Grade 10 Literacy test. She liked to know what the students were doing in other subjects, and

she praised colleagues when their students engaged in activities that she thought were interesting. The men in her Science department, Marlene noted, were more focused on Science during the day, and left it to her to inform them of what was occurring in other departments (I. #3, p. 160, 162, 164).

Carole, with her cheery disposition, maintained she had no problems interacting with people. Although she did not have the time to sit down and "chit chat" with her colleagues, she did make a point of saying "hi" to everybody – secretaries, cafeteria workers, students, and teachers – every morning.

> If you say, "Hi" to somebody every morning, they like you. If you see they're down and you say, "What's the matter? [There's] beautiful sunshine outside?" or something [similar], it cheers them up. I like doing that. And, they like me. (I. #3, p. 71)

Carole also visited and socialized with the cafeteria staff in the mornings when she made her own breakfast in the cafeteria. Despite her cheerfulness, she admitted that she found the school atmosphere cold and that teachers could be more friendly to students in the halls (I. #2, p. 30; I. #3, p. 18 and 20).

While Karen conceded that she did not have a lot of interaction with all the staff, she did approach all the teachers each year begging each to participate in a skit for the Christmas assembly. She intentionally did this because it forced her to have contact with all the staff (I. #3, p. 77). When Karen conversed with staff members it was usually about the extra-curricular activities they were involved in rather than classroom events.

Legislation passed by the provincial Progressive Conservative government in 1998, increased the amount of instructional time secondary school teachers were required to teach to four hours and 10 minutes a day, or 1,250 minutes a week. Full-time secondary school teachers were also required to teach 6.67 credit or credit-equivalent courses a year, an increase of 0.67

courses a year. Initially, many school boards implemented the 0.67 course increase by having teachers teach seven out of their eight scheduled periods for the year. Previously, teachers had taught six periods and had two preparation periods – one each semester,[12] during a school year. The government later amended their definition of what constituted instructional time, and while teachers regained their one preparation period per semester, they had to spend some of it, or part of their lunch hour, engaged in additional teacher assigned duties, or TADs. Several women remarked on the deserted state of their staff rooms as a result of the legislation. Marlene, for example, noted that teachers never ended up in the staff room because they had to do lunch hour supervision, computer room supervision, or other similar duties (I. #2, p. 38 and 40).

Nancy maintained that when she first began teaching in the 1980s, the staff room was an enjoyable place to be. At lunch time it was always full of people who would laugh and have great conversations while they ate their lunches. But this happy environment deteriorated over the years, with the final blow coming with the government's mandating teachers to teach seven out of eight classes a year – or one semester of four classes with no preparation period. Now only three or four teachers frequented the staff room on a regular basis. Teachers no longer gathered in the staff room, preferring instead to "go into their own little corners ... to get [their] work done" (I. #3, p. 92). For Nancy herself, the increased workload meant she spent her lunch hours working in isolation rather than socializing with her colleagues. She stated that the

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[12]In semestered secondary schools, a school year contains two semesters. Generally, a semester is half the school year and has five periods. Thus, each day, teachers would have four class periods in addition to a lunch period. One of the class periods would be a preparation period in which teachers would plan or prepare lessons, mark student work, duplicate student worksheets, organize field trips, contact parents, and do other similar business. Ontario government legislation in 1998 increased the amount of instructional time required of its secondary teachers. Many boards responded by making teachers teach seven classes in the eight periods; meaning that the teacher would teach a semester of four classes with no preparatory period and a second semester of three classes and a preparatory period. The Ontario Secondary School Teachers' Federation was able to persuade government officials to broaden their definition of what constituted instructional time, effectively ending the "seven out of eight classes" or the "four out of four classes" practice.

alternative was to bring her work home, giving her less time to help her children with their homework.

> Going back to a few years ago when we had to work 4 out of 4 – that seemed to really put a strain on the staff. Some staff actually had to take a lot of time off because they couldn't handle four out of four. It was an awfully heavy workload. ... People used to go into the staff room prior to that. When I first started back in the 80s the staff room was full. People would go there, they'd be laughing at lunch-time [and] actually enjoying their lunches and [having] great conversations. That deteriorated over the years, and with that four out of four – very rarely do people go in there [now]. There are maybe three or four staff members that go in there on a regular basis. But essentially people end up working through lunch, or some of them to get out of [the school], they will go home if that's possible. (I. #3, p. 90)

Laurie, a colleague of Nancy's, agreed that there used to be more time for the staff to relax, socialize, and have fun with each other. She recollected that in the past, the staff room was not really frequented during the day; instead, teachers would congregate in the different department offices. Teachers on their preparation periods, or "preps," might visit different department offices to hold meetings or just to socialize with each other. Laurie asserted that in one regard, the staff was more insular then because teachers belonged to tightly knit subject-based groups that socialized within the group. The Math-Science teachers, for example, formed one of these groups.

> It was a fairly big school and there were offices all over the place. Even though there was a central staff room it wasn't really frequented that much. So it was more insular from that point of view. On the other hand, the group that you were in was much more tight knit and they socialized a lot more. There was a lot more time to hang out and just relax. People just rotated around to the different houses and we would have "meetings," hang out and just relax with each other. (I. #3, p. 17)

However, Laurie maintained that with the decline in student population and the corresponding reduction in the number of teachers, only a few teachers would share the same preparation period. Thus, when teachers on preparation periods worked in their respective offices, it was conceivable that there would be only one teacher in that office, thereby contributing to the

isolation that Nancy noted. Laurie worried about the impact of the isolation on younger teachers.

> It's very insular. I'm very worried about the younger teachers. You have to have someone there to say, "Yeah, some classes are like that. It's not you." Or, "Are you having trouble with so-and-so? Well, I had trouble with him last year. It's just the way he is. It's not you." That kind of thing – just to talk about stuff like that. (I. #3, p. 17)

Laurie maintained that work had become so hectic that teachers no longer had the time to visit with each other. In addition to the work involved in implementing the new curriculum which was phased in beginning in 1999, declining student enrolment also created additional work. A shrinking student population meant fewer sections of each course were offered. Consequently, teachers had to do more preparatory work because they had to teach five or six different courses in a year. In the past when the school was larger, a teacher might only have two or three 'preps' because she taught the same course three or four times over the course of the semester or year. Laurie, however, was able to find a positive consequence of teachers having to teach a larger variety of classes. Many teachers were having to teach in other subject areas and this interaction made Laurie's staff a more homogeneous group. Unfortunately, there was less time for socializing because everyone was so busy (I. #3, p. 17 and 92). Laurie asserted,

> You know, we're tying to cope with the changes in the curriculum, working everything out with fewer [Professional Development] days and doing a lot more on [our] own time. Even though we're more homogeneous in being sort of one staff instead of five distinct [departments], there's still less time for socializing than there ever was before and just relaxing and just talking about things with each other. (I. #3, p. 17)

Recent government legislation contributed to an increase in teachers' workloads by legislating teachers to interact with students for an additional 37.5 minutes per day. The additional duties were labeled "teacher assigned duties" or TADs. Examples of TADs included increased hall and cafeteria supervision, mentoring colleagues, and teacher coverage

of absent peers' classes – also referred to as "on-calls".[13] Carole asserted that on-calls created hostility between staff members. Since on-calls meant a teacher had to cover a colleague's class when the colleague was absent, on-calls caused anger and hostility to be directed at the absent colleague.

> You hear one [teacher] talk about the other one. "Oh, she missed again. It's always the same people." And the [teachers] that are sick and keep hearing that, don't take a day off. I know I don't. (I. #3, p. 226)

Carole chose to come to school ill because she did not want teachers complaining about her absence and because she did not wish to create additional work for them. The negativity associated with on-calls placed stress on the absent teacher, too. Marlene, for example, stated that she always tried to prepare self-contained lessons for the teachers who had to cover her classes (I. #2, p. 44). Participants noted that the assigning of on-calls also caused tension between teachers and support staff. Karen, for example, stated that her colleagues could become nasty to the attendance secretary whose job was to distribute the on-call assignments. Realizing the secretary's predicament, Karen accepted her on-calls pleasantly and often volunteered to do more.

> People can be nasty and I'm the opposite. I'll say, "Give me a double." I've got all [my additional duties] done now. I'm probably the only staff member that has them all done because I volunteer [to do a lot]. (I. #3, p. 14)

The teachers also complained about the burden being placed upon them from the administrators. As Carole asserted,

> The added duties and the internal supply – people are so stressed [because] they don't have much time. [Teachers complain,] "Oh, this [teacher] is always missing. Here's another on-call. Always the same. I'm tired too." What are the administrators trying to do to us? (I. #3, p. 218)

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[13]How boards handled the extra hours teachers had to work varied, and even within a board the decision of what activities constituted a TAD could vary from school to school.

The additional duties placed on teachers and support staff added to their workload and increased their levels of stress.

Within Laurie's staff, feelings of futility, lack of influence, and apathy caused teachers to lose interest in working with other teachers in the board on union and contract issues. Having been part of a smaller school board prior to board amalgamation in 1997, Laurie and her colleagues had had a greater impact on contract and union issues. Now, because they comprised only a small percentage of the teachers in the new local union, Laurie and her colleagues had little impact on contract talks. Consequently, Laurie found it very difficult to get teachers involved in union business. Laurie's colleagues believed that their opinions did not matter, especially when union officials based in the nearby urban center often forgot to invite them to union meetings.

> We used to have a smaller board. We negotiated. We sat right across from the Director and the Trustees, eye-to-eye, and we could make our case and we felt that we were making a big difference. Now, we don't make a big difference and we know it. So we're just trying to survive. "Union? Whatever." It's all going to be decided by the people in [the largest city in the board] anyway, so why should we bother? (I. #3, p. 132)

Laurie, who sat on her union's negotiating committee and was chief negotiator for several years, did not want to be involved in union business either, believing it would be wasted effort. Furthermore, Laurie felt bitter because many of the gains the local union had made in the last ten years and which Laurie helped negotiate, were wiped away in the new contract with the amalgamated board. Laurie identified this change in her staff's attitude toward union issues as one of the major changes in her environment since she began teaching (I. #3, p. 130, 132, 134, 135, and 137).

Relationship with Principals and Vice-Principals. All the women acknowledged having good working relationships with their principals and vice principals. Three of the

women, two of whom taught at the same school, had a female principal. Both of these female principals had difficulties with certain segments of her staff. Debbie, who had a good relationship with her administrators, maintained she did not see the principal often because it was a large school and he was usually in his office working. None of the teachers remarked on problems with their vice principals, although Debbie did assert that those teachers relocated to her current school were unhappy with the way administration dealt with discipline issues. Debbie and Laurie did, however, have difficulty with earlier vice principals.

Debbie asserted that staff morale at her school was not good. As a consequence of a school closure two years ago, Debbie and nine colleagues were transferred to this school while her other colleagues were sent to different schools. Having come from a smaller school with a more familial atmosphere where staff worked closely together, Debbie and her old colleagues found it difficult to adjust to a larger school where staff saw each other only at monthly staff meetings. Despite having been at the new school for two years, some of the transferred staff were still having trouble adjusting. Debbie maintained that part of the problem was that things were done differently at her former school, especially the manner in which administration handled student discipline (I. #3, p. 10, 16, 20 and 22).

While Marlene maintained that generally her staff was a good one, and that her principal was "fairly good" (I. #2, p. 48), she conceded that there was a problem with a small group of men, which she called the golden boys' club. This elite group of younger males, who were 35 years of age or younger and who tended to have Physical Education backgrounds, were offered plum opportunities to attend conferences, and did not "pull their weight" in terms of completing teacher assigned duties (TADs), running extra-curricular activities or sitting on committees. This group of teachers received recognition while more experienced teachers did not.

There are certain people on our staff who can do no wrong. They always get

> chosen to do things like "Best Practices in Teaching" [an annual conference], although they've only been teaching two or three years. Everybody supports them a lot, they get a lot of recognition for the things that they do, but there are a lot of older teachers on staff that have been doing an excellent job for years and we seem to forget them. (I. #1, p. 67)

If these teachers needed money to operate their school teams or clubs, Marlene maintained, they would get it, while others would not. She perceived that this was because some staff were excellent at networking and at obtaining praise for their students' accomplishments. Part of the problem, Marlene felt, was because the principal, a former staff member herself, was friends with the staff prior to acquiring her position. The golden boys' club socialized with the principal's husband, played on the same curling team, and went ice fishing and snowmobiling during the winter weekends. The members of this club, Marlene stated, no longer ran an intra-mural sports program. She hypothesized that it was because they did not wish to give up their noon hour and wanted to be out of the school by 3:10 p.m. (I. #1, p. 179, and 185; I. #2, p. 87, 94, 98, and 100).

Additional information provided by Marlene suggested there were others in addition to the golden boys' club who did not coach teams, advise clubs, or do committee work. Marlene asserted that members of the Science department each sat on at least two school committees, but about half the staff did not participate in any committee and went home at 3:15 p.m. each day. Members of the golden boys' club were part of the latter group. This inequitable division of labour upset Marlene. While she conceded that it was a teacher's prerogative to not sit on committees or do extra-curricular work, she asserted the non-participating teachers should be asked by the principal to sit on committees, too. Marlene believed that unlike her and her actively participating colleagues, these teachers did not see teaching as a calling.

> It's our younger staff who are going home. It's our younger staff who don't participate in things. And some of our old staff. I think they are wise in some respects. They have a job to do and they do it. They treat [teaching] more like a job rather than like a calling. (I. #2, p. 59)

At a recent department meeting, Marlene and her Science colleagues decided they would limit their committee participation next year. Because she was doing too much, Marlene's new plan for next year was to say no, although she did not know what the repercussions of doing so would be. She feared that if she said no, then she would not be asked again (I. #2, p. 52, 53, 57, and 59).

Unlike some members of her staff, Marlene had completed all her TADs by the beginning of March. While her principal acknowledged the hours Marlene had spent completing her TADs, and had told her she did not need to do any more, Marlene continued to do them in order to fulfill commitments she made earlier. Annoyed because some members of the staff had done no TADs (the school board did not check), Marlene brought the issue up at a professional development session. As the session was finished by 3:00 p.m., the principal responded by telling the staff not to leave before 4:00 p.m. Marlene wanted to know what her principal would do the following day as a group of teachers defied the principal's instructions and left early to have a swim at the public pool (I. #3, p. 134 and 138).

Karen and Carole asserted that the interaction between their new female principal and some staff members was often strained. While Karen and Carole liked this principal and understood the demands of her job, this could not be said of all the staff. Many teachers perceived her to be inexperienced and inflexible. Carole asserted that some of the male staff talked behind the principal's back and gave her a hard time. Karen maintained a quiet and friendly relationship with the principal and did what was asked, whereas some department heads were always in the principal's office making requests. When teachers walked into her office, Karen stated, the principal would assume the worst and anticipate a confrontation – a characteristic which became more pronounced when she dealt with male teachers. Both women asserted that the principal's literal interpretation of the rules, and her unwillingness to alter them

to suit individual circumstances, contributed to the problem. Her inflexibility, incidentally, was an admirable trait when she was vice principal because it worked to the teachers' advantage, Carole maintained. Karen believed her principal was trying to be very professional and was following the rules, but was doing so with a lack of creativity – something which Karen believed would come with time. Carole found the principal fair because she applied the rules equally and because she visited all the school clubs, not just the sports teams (Carole, I. #2, p. 49, 53 and 62; Karen, I. # 2, p. 39, 41, 43, 45, 51, 55, 67, 71, 72, and 73).

To demonstrate her principal's inflexibility, Karen shared a story about an event which had occurred just prior to her second interview. In the past the whole school would be dismissed at 11:30 a.m. to attend the spring track meet, however, the new principal gave some teachers who were not directly involved in the meet, on-call assignments involving cafeteria and library supervision. The affected staff were unhappy with their assignments, and Karen witnessed a teacher, who had been given an on-call, confronting the principal as to why this supervision was necessary since all students had been dismissed. Of the principal's decision, Karen said,

> It's almost like you don't trust the kids and you really don't trust the teachers to do what they're supposed to do. ... It was like, you ... stay at school and do work if you're not working at the track meet. (I. #2, p. 72)

For twenty years Karen had attended the track meet to support the students and to talk with parents and students, and she attended this time too, but did so with feeling of guilt.

> I actually was nervous being there. "Am I doing the wrong thing sitting at the track meet?" I sat there till 7:00, until every relay was gone, talking to parents, talking to the kids, and I figured, "that's my job." But she made us feel like we don't trust you, you're just going to take off, you're going to abuse this privilege, the public is going to see you, I'm going to look bad. (I. #2, p. 73)

The principal's decision, Karen, maintained would be discussed in the staff room the following day.

The interaction between vice principals and the participants was perceived as positive. Laurie and Debbie, however, discussed past incidents where each had encountered problems with a previous vice principal. Debbie asserted that at one of her previous schools, the disciplining of students by the vice principal was handled differently when the concerned teacher was a female. When asked for an example, Debbie maintained,

> ... like sending kids to the office and having them sent right back [by the vice principal]. I don't know if it was because I was a rookie teacher or if it was because I was a female teacher, but that happened quite often. I didn't appreciate it, especially when I thought that because of the incident the student, instead of being sent back to class, should have been sent home. That happened a couple of times. (I. #1, p. 134)

Offending students were returned to the classrooms of female teachers, but not to the classrooms of male teachers.

> The odds of the vice principal sending the student back to the classroom [of a male teacher] were pretty slim.... [The vice principal] would have dealt with the student in a more severe fashion. (I. #1, p. 136 and 138)

Debbie asserted that this particular principal was known for not supporting his female teachers (I. #1, p. 134).

Laurie also encountered a problem with a previous vice principal, who she claimed, had difficulty with assertive women. When asked by the vice principal for homework for a student who had been absent for an extended period of time, Laurie responded as she had heard a male colleague respond. Reflecting on the incident, she stated,

> We had a vice-principal who ... had a real problem with assertive women. He could never be wrong about anything. There was a student who was away – I think she was there for a couple of days and then she was gone for a month. I got a slip that said they needed one day's worth of work for her. So I was going about my business gathering up a gazillion sheets and everything to give to this girl. One of my male colleagues was saying to the vice-principal, "You know, so-and-so's been away for so long I'll just wait until she comes back to class before we get her caught up because there's no point giving one day's work for that." And I said, "Well, if he can do that, I should be able to do that." (I. #1, p. 80)

So, Laurie wrote a short note stating, "I'll get her caught up when she comes back to class" (I. #1, p. 82). However, Laurie was "called up on the carpet" (I. #1, p. 83) for refusing to give a student work, while her male colleague was not challenged. Treating the incident as an example of sexual discrimination, Laurie was able to involve the union. Although she agreed that she should have provided the work, it was also agreed that the male involved should have, too (I. #1, p. 83).

Relationships within the Science Department. For the most part, these women interacted positively with members of their departments. However, as department head, Karen sometimes had to handle difficult situations, and sometimes, as Marlene related, department heads created difficult situations. For example, with the departure of a female department head, the atmosphere within Marlene's department improved markedly.

Over the years, as the Science lead teacher, or department head,[14] Karen had had some angry teachers to contend with in her department. Some of the teachers thought she disliked them. Occasionally, she overheard comments that she always got the best courses, but because she was the lead teacher and she did have more seniority, she maintained that this was true, she did get the best courses. Karen confided that, more recently, a Chemistry teacher who was hired for a short period at Karen's school before being transferred to another, might have hostile feelings against her (I. #1, p. 146, 147, 148, and 149).

> I think she may have thought that I had something to do with [her being transferred]. When I see her in the coffee shops I don't get the best feeling. I know there's a wariness or uncertainty as to whether or not I had anything to do with it. (I. #1, p. 149)

Karen described herself as an intense and aggressive person who people sometimes found a little threatening and intimidating. With these attributes, Karen did not think she needed to worry

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[14]The internal administrative structure of the schools in these two boards were changed after 1997, when boards were forced to reduce their spending. The phrase department head is used here, but terms such as lead teacher or program leader may also be used.

about people, such as the hostile Chemistry teacher mentioned above, retaliating against her. On the whole, though, Karen described her department as having a cooperative and collaborative atmosphere. She maintained that she had an individual relationship with her Science teachers, that she was not a dictator by any means, and that her teachers respected her. Teachers in her department decided how they would teach the curriculum and worked together sharing their information, thereby relieving pressure on her (I. #2, p. 31, 35 and 37).

Marlene asserted that relations within her Science department improved after the female Science department head left three years ago. A personality clash existed between this woman and the rest of the department: Everyone walked around on eggshells. In terms of management style, she "memo-ed her teachers to death" (I. #1, p. 115). Giving an example off the top of her head, Marlene maintained that there were many silly things teachers were told not to do, such as use the stapler in the Science department office at lunch because it was too noisy. Although the female department head was an excellent teacher, she wanted teachers in her department to teach like she did: She insisted that concepts be taught a certain way and was not receptive to new ideas or to teachers trying different teaching techniques. With her gone, Marlene claimed, the Science teachers now had open communication and good discussions (I. #1, p. 105, 107, 111, 113, and 115).

To obtain an indication of the type of relationship between teachers in each Science department, each participant was asked who would be invited if the women in the department were going out to lunch. A subsequent question asked who would be invited if the men in the department went out to lunch. Carole, Nancy and Debbie believed that in each case the invitation would be extended to the whole staff. Marlene believed that only herself and the men in some other departments would be invited. Laurie stated that because there were only two male Science teachers, they would have to ask the fellows in the Math department as well as the

husbands of the female Math and Science teachers. Her male colleagues and the female teachers' husbands, Laurie maintained, socialized frequently and excluded the women; a situation she perceived as being "kind of weird."

> For example, they would go out to men's golfing night. They would [each contribute] money ... and buy pizza and drink beer and play golf. So my husband got to go, not me. That was kind of weird. So sometimes they would do that sort of thing.... [It] was mostly the men and the male spouses of the female staff that would go out. (I. #3, p. 79)

While the female staff did socialize after school, they did not do so as frequently as the men. However, Laurie asserted, with changes to the education system and increases to teachers' workloads, there had not been so much time to socialize after work as there had been. Karen also found that men socialized together more after work than did the women on staff, and of the men, it was the "hockey guys" who socialized most frequently. In responding to my interview questions, however, she had difficulty picturing the men in her department going to lunch together. Laughing, she insisted that the Physics teacher was too distant from the others and would not go, and that lunch would not be initiated by these men.

> It's not even a concept that would happen. Those three guys in our department wouldn't go out to lunch, they wouldn't. Two of them might go out to lunch with some other guys in the staff room, but I just can't see our Physics guy ever going out to lunch. He wouldn't. He's just distant from them. It just wouldn't happen. The hockey coach wouldn't go unless it was part of another group. The nucleus for going out to lunch would never come out of the Science department. (I. #3, p. 85)

As a department head, Karen considered inviting her Science colleagues to a year-end barbeque, but then maintained it would be an awkward situation. Instead, she preferred to interact with her colleagues individually.

Marlene, whose husband was also a Science teacher at the school, maintained a closer relationship with the men on the staff. She even played hockey with them. Because her interests differed from those of her female colleagues, she generally did not socialize with them

when they planned gatherings.

Relationship with Support Staff. Each participant reported having a positive relationship with the members of her school's support staff. One participant made her interaction with the support staff a priority.

Each teacher interviewed enjoyed a positive relationship with her respective secretarial staff. Laurie, Karen, and Marlene each recognized that the secretaries were very busy, and tried not to make extra work for them. Secretaries at Laurie's school were invited to all staff functions. Debbie had a very close relationship with the two secretaries who were transferred with her when their school closed.

Marlene believed her staff was very unified in maintaining a positive relationship with the custodial staff. The school's custodial staff were invited to staff meetings and sat on committees, such as the Safe School Committee. Marlene stated that it was wonderful to have them at staff meetings (I. #3, p. 75, 77, and 79).

While Carole maintained a friendly relationship with all members of her staff, when she was not teaching it was with the kitchen staff that she spent most of her time. She disliked hearing teachers complain about students. All teachers had problem students, she asserted, and must learn to deal with them. With the kitchen staff she could talk about her involvement in the Virtual Science Fair, her children and her grandchildren, and not about problem students.

Karen made her interaction with the secretarial and custodial staffs a priority. She recognized that they were unappreciated and underpaid for the work that they did. Jokingly, she claimed her positive relationship with the secretarial staff was because the attendance secretary kept candies on her desk. Karen tried to be very considerate of the secretaries. She respected their deadlines, assisted them with their tasks, and, if one was ill, sent cards and plants. (She also contributed candies to the attendance secretary's candy bowl.) Her department did not give

them additional work. As an example, Karen stated that the Science teachers typed up their own exams and had them filed in the office before the deadlines.

From the information Karen presented, it was evident that the secretaries appreciated her and her thoughtfulness. Each of Karen's telephone interviews were conducted at her school beginning at 6:30 a.m. or 7:00 a.m. Prior to each interview, one secretary came to the school earlier than usual to answer my telephone call and to redirect it to Karen in the Science department office.

Karen also showed consideration for the custodial staff. During the times of the year when she was not coaching and not required to be in the school in the evenings, she would visit the school just to make contact with the janitorial staff. She made it a point to know all the regulars by name, to have a unique relationship with each, and to know who cleaned her class room. She maintained that she had "a relaxed, respectful kind of relationship," (I. #3, p. 27) and that there were other teachers on her staff who did not talk to the janitorial staff. She recognized that her Science department created much work for the janitorial staff, and she felt badly about it. The counter tops, sinks and lab benches all needed to be cleaned regularly and the cleaning created an extra source of work for them. In the past, as a helping gesture, her department would assist the janitorial staff in cleaning and painting their classrooms in June and over the Christmas holidays. However, with government funding cutbacks to school boards, her staff could no longer help because it would hinder the janitorial staff in their negotiations for better working conditions.

> If they can't get the rooms clean, then we want the rooms to be dirty so they can't be cleaned quickly. You try and help them out but not to the point where it's going to ... jeopardize them in terms of their work issues. (I. #3, p. 35)

Karen realized that she also created a lot of work for the janitors because she cleaned out her files every fall. However, they have been very accommodating and have kindly disposed of

her materials.

In a similar vein, Laurie commented on how recent funding cuts impacted the custodial staff and the physical environment in which teachers worked. The hours the janitorial staff worked were reduced, their workload increased, and two janitors were replaced by a large machine that buffed the hallway floors. Before the cuts, the classrooms were cleaned daily and doorknobs and desk tops were disinfected. Now, only the office and hallway floors were cleaned daily because that was what the public saw. The classrooms where teachers and students engaged in the learning process, however, were dirty and scummy because they were cleaned every second night.

> [Before the funding cuts] it was a much better working environment – I've felt that. [Now] when you walk into the room you can tell the floor hasn't been swept and the blackboard has not been wiped and everything's all scummy from yesterday. It just – it doesn't give me a pick-me-up. (I. #3, p. 89)

From a health perspective, Laurie worried that teachers and students would catch more illnesses because doorknobs were not being disinfected daily.

Interaction with Parents

Each participant stated the work they did was appreciated by parents. As mentioned earlier, parents recognized that these women were competent and qualified in their subject. While parents were often reluctant to contact teachers about their children's progress, they did appreciate it when the contact was initiated by teachers. Several participants believed that parents' experiences over time with a particular teacher increased the parents' comfort level. The increase in parents' comfort level was demonstrated in several ways, including expressing concerns about other Science teachers, visiting during Parent-Teacher Night, and not attending Parent-Teacher Night.

Carole maintained that parents recognized the amount of work she did. Even her

neighbours recognized her dedication; some even stated they wished they had had her as a teacher. Parents of failing students appreciated Carole's attempts to have her students be successful. To facilitate student success, she provided extra help after school and gave out her home phone number and e-mail address. While the male Science teachers had long queues, she found Parent-Teacher Nights quiet. Sometimes parents of former students would drop in to chat when she was not busy, demonstrating that they were comfortable with her (I. #3, p. 73, 116, and 124).

Nancy found that parents were leery about contacting the school and appreciated it when the teacher made the initial contact. She noted that parents were often misinformed by their children that 'everything was fine' and that the children had no homework. When parents learned otherwise, Nancy always found them supportive of the teacher (I. #3, p. 35 and 43). Nancy related one instance where a female teacher with two or three years' experience was being criticized by parents for her management style and for her students' failing marks. As discussed above, this teacher was given large Grade 9 and 10 applied-level classes which would have been a challenge for any teacher to teach (I. #, p. 49 and 55). Nancy also found that those who were not supportive of teachers tended to be those with children who had serious behavioural problems (I. #3, p. 59).

New teachers, Laurie asserted, were an unknown quantity and they looked young and inexperienced. Consequently, they were more apt to be questioned by parents. As a new teacher, Laurie perceived there were many parents questioning her competence as a teacher at Parent-Teacher Night: Parents would want to know why their Grade 9 child had a 60 percent in her class but had an A in Grade 8 Science. With experience, however, she learned that when she taught Grade 9 academic-level Science she would have many parents on Parent-Teacher Night

asking that same question.

> So after I taught for a few years [I realized] that's going to happen every time [I] have an academic grade 9 class. There's always the [parents] wondering what's going on, how they're [children] making the transition to high school, and whatnot. It just seemed that there were a lot of parents questioning your authority when you were younger. (I. #3, p. 8)

Laurie asserted that she had always had good interaction with parents, and they very rarely gave her any grief, perhaps because she used a problem-solving approach. When she phoned a parent, she would say something similar to: "I've got some concerns about your daughter. This is the kind of behaviour she is doing [or not doing]" (I. #3, p. 48). Parents appreciated her contacting them, because they were usually concerned about their children, too. On one occasion, however, she encountered a "belligerent father" (I. #3, p. 48) at the other end of the telephone line. He responded that his son had a problem with her, personally. Laurie felt better after conferring with her colleagues and learning that this parent behaved this way to all his son's teachers, and that it was not her personally.

Laurie contended that there were several factors that contributed to parents' comfort with a teacher, including the teacher's growing experience, the teacher having taught the parents' older children or other close relatives, the teacher having taught the parent, and by interacting with parents in the community. Living in a small community, Laurie frequently encountered parents in the grocery store and in other local establishments. The parents' experiences with a teacher contributed to the teacher's reputation so that when new students arrived,

> their older sister or cousin, or whatever, has already had you [as a teacher], so they have certain expectations. When you're a young teacher you're an unknown; they've got to find out what you're like, and they'll test you in many and varied ways. When you have a certain rep and it's a good one, half the battle is already over. They know you mean what you say.... (I. #3, p. 56)

That parents were comfortable with Laurie and valued her opinion was evident when they approached her about their concerns with other teachers, usually younger female teachers. In the

example that Laurie chose to share, a female parent complained of her son's poor performance in Math and implied it was the teacher's fault. This parent, Laurie stated, did not consider the fact that her son had difficulty in Math (I. #3, p. 64).

Parents had approached Karen their with concerns about other Science teachers even before she became the Department Head. Invariably the teachers in question were male. The concerns expressed by the parents were always the same and the encounters usually occurred during Parent-Teacher Night. Karen stated that she could always anticipate when the parents had a concern and that she knew where the problem would lay if they had a concern.

> It was really just a few times where we had some problems with evaluation and attitude. I don't think it's been another female colleague they've expressed this concern about. It's always been in particular one male, sometimes two [sic]. One for competency, one for attitude with the students, and one for being too difficult with the students – the expectations were a little bit too high. They were probably appropriate – it was just the subject matter again. But they're always the same concern about the same teachers in the same way. (I. #3, p. 56)

Karen maintained that the problem or concern would be introduced into the discussion casually with the parents often claiming they could not phone as they did not want to "stir the pot" and that their child, who was having a problem in a particular Science class, wanted them to approach Karen about the issue. She asserted that the parent's concern, "comes out very relaxed and apparently off the cuff. But in fact I know it was a very direct attempt to get some action without stirring up trouble" (I. #3, p. 54). The student in question might not be one that Karen currently taught, but the parents felt they could confide in her and bring the issue up as one that might be affecting her department. Karen stated

> I think they feel [so] comfortable telling me things about male colleagues that I have to be very careful. I think it's lucky that I am the head because they can say it as a concern for my department if there is a concern. But I know they're doing it simply because I'm a good listener and they feel comfortable expressing their concerns to me. We have a few incidents where there's been problems with some of the male colleagues and they've come to me to talk about it. Usually they don't approach me other than at parent-teacher interviews, and they switch

> the interview from what's happening in my Science class to what's happening in another Science class. (I. #3, p. 48)

Karen has often been approached by parents when she was outside the school setting. At a recent track meet, for example, she spent the afternoon and evening visiting with parents and students. People in her neighbourhood were comfortable in requesting favours, such as asking her to tutor a child that she did not currently teach. She found that parents were always very appreciative of her efforts.

Marlene made a concerted effort to interact with parents. As the Strategies for Success chairperson, she advocated contacting parents about their child's progress whether that progress was good or bad. With age, she asserted, she became more realistic and assertive. She now believed that parents needed to be told the truth about their child's performance.

> [I realize] that they need to hear those things. I don't tell them that it'll be alright. Sometimes I just tell them how it is now. And I think that's just because I'm more mature as a teacher. When I first started talking to parents I would assume that everything would be hunky dory. Now I know sometimes it takes more work than that and they need to be told up front that. So I think I'm more assertive with them.... It's too bad that doesn't happen in our 20's. (I. #3, p. 101)

Her effort to engage parents was evident on Parent-Teacher Nights. She claimed that of all the Science teachers at her school, more parents visited her because she phoned them ahead of time to invite them, unlike her male colleagues.

Last year when a student was suspended for throwing a book which hit Marlene, she had to contend with an angry parent. This woman contacted the parents of all Marlene's students and complained about Marlene having her child suspended.

> ... that parent called every one of my other students' parents – every one of them. Somebody gave her all my class lists and she phoned every parent because she thought I had done her child wrong. So I had to deal with that issue last year, which was none of my doing. I didn't suspend the kid. (I. #3, p. 87)

A large majority of the parents supported Marlene. Interestingly enough, the incident was

precipitated by a male Science teacher. The student had come to the homework class and, in frustration, had thrown a book which had incidentally hit Marlene. The vice principal, not condoning violence, suspended the student, but the parent - a neighbour of Marlene's, incidently - directed her attack at Marlene (I. #3, p. 85, 87, 91, and 93).

Debbie noted that since she began teaching parental respect for teachers had eroded. She maintained that while many parents did respect teachers, there were more that would vocally blame the teacher for their child's failures. Debbie also noted that parents appreciated being contacted about their child's progress. However, some parents would acknowledge her concerns but would do nothing to rectify the problem.

Discrimination and Prejudice

Since this study examined the experiences of women Science teachers, it was appropriate that the impact of their gender on their experiences be addressed. None of the women perceived their being female Science teachers as a concern. When questioned about any perceived hiring advantages or when asked for examples of sexual harassment, sabotage, poisoned work environment, preferential treatment, and promotional opportunities, the majority of the responses provided by the women suggested that being a female Science teacher was not a concern. However, for each of the questions dealing with the above issues, one, and sometimes two, of the women gave a response that showed that their gender had either negative or positive consequences.

Irrelevance of Teacher's Gender. Karen, Debbie, Marlene, and Carole did not believe that being a female played a significant role in their being hired to teach Science as they were all qualified Science teachers with Science degrees. As a new teacher, however, Nancy believed that being a female Science teacher may have had hiring benefits for her, because "back in the '80s it seemed to be trendy to get more females involved in Math and Science.... I just assumed

it would be an advantage to be female" (I. #1, p. 62). Laurie was not sure if being a female Science teacher was a factor in her hiring. As she explained,

> I honestly don't know.... [A man] ... was hired exactly the same time as I was. At the time there was a comment about how they'd hired one woman and one man.... So I think they may have gone in knowing they had two positions to fill and maybe they decided it would be nice to have one of each. But that's the only comment that was made at the time. And there was a woman [Science teacher] leaving. She was going to be moving, [because] her husband had a new job, ... in the [southern Ontario] area. He was going to be moving and so [the administrators] knew she was going to be leaving. She was the only woman in the Science department at that time. So I think maybe they thought that would be a good thing – to have one woman come in as one was leaving. (I. #1, p. 24 and 25)

Karen did not find that there was any actual push toward the recruitment of females in Science when she was hired at her present school as a senior Biology teacher. However, a male supply teacher who unsuccessfully applied for the job she landed perceived that she was hired simply because she was a female. He complained of this to the administration and to whomever else would listen when supply teaching in other city schools. Karen's sister, who taught in a nearby school, informed him that Karen was indeed qualified with her Honours degree in Biology when she overheard him complaining at the school where she worked (I. #1, p. 88).

Both Nancy and Debbie adamantly insisted that gender made no difference in their teaching experiences. Nancy, for example, stated, "I don't tend to think in terms of gender differences. It's just we're all staff and we're all doing our jobs" (I. #2, p. 103). Similarly, Debbie maintained,

> I have a hard time deciding or focusing on gender. I always have and I probably always will. It never, even when I was in university, it never dawned on me that it was unusual for me to be in Science because I was female. (I. #2, p. 80)

However, when responding to other questions, both Nancy and Debbie were able to provide an experience in which gender was an issue.

Being Female was a Plus. While being a female was not a hiring advantage, Karen believed it may have helped her edge out an older, qualified male when she received the Science Department Headship. After a few years teaching, Karen was appointed as the Assistant Head of Science, a position she was initially reluctant to apply for and applied only after being encouraged by her principal. She maintained that she was dedicated and doing really well teaching senior level courses, and was the obvious choice within her school for the assistant headship. The position of Science Department Head, however, was open to Science teachers within the board. Karen asserted that while she was qualified and more capable than the other leading candidate who had been in the system much longer, being a female in this situation was probably an advantage.

> I think I may have been hired because I was better qualified – not qualified, but more capable. This fellow was not well organized. He was just a disheveled teacher. Bright, brilliant, but a bit of an organizational mess. So, I think I was the person they wanted.
>
> But I think there probably was some push to get a female in a position of responsibility because when I went to those Science Heads meetings I was the only female. And, so I do think the Board said, "Look, we have a good candidate. She's probably better than him." And it would fit the bill - you know - that was Status of Woman stuff. I think it did help me – to be honest. It was just that extra little justification perhaps - you know, filling a quota. But I don't think they'd ever say it. I don't know what the legal things were, but I always thought it didn't work against me to be a female in that case. (I. #1, p. 92 and 93)

Those who were placed in leadership positions at her school now, Karen maintained, were team players who contributed to the school in a variety of ways.

Examples of Gender-Based Discrimination. When asked if her career had been impacted because she was a woman and if she had encountered a poisoned work environment, Laurie was the most forthcoming with her stories. One of her previous vice-principals, she maintained, could never admit he was wrong and had a problem with assertive women. Laurie received a notice requesting a day's work for a student who had been away for an extended

period of time. As she was in the process of compiling this work, she overheard a male colleague telling the vice-principal there was no point in compiling a day's work and he would give the student her work when she returned. Believing that her colleague's suggestion was a good one and that it would save her work, she informed the vice-principal that she would help the girl catch up when she returned to class. Laurie found herself chastised for not giving an assignment (I. #1, p. 83). After discussing the issue with her union representative, she decided to pursue the issue as a gender form of harassment because she was not treated the same as her male colleague. When the situation was resolved, Laurie agreed that she should have given the assignment and a letter to this effect was put in her file. The letter was to be removed at the end of the year. It was also agreed that everyone should have been treated equally: If she had to give an assignment, then her male colleague also had to give an assignment (I. #1, p. 80, 82, and 83). This administrator later became Laurie's principal. She confided that he had grown as a person and as an administrator, and that he was a much better principal than he was a vice-principal. She also maintained that he had improved significantly in his people skills, becoming more deferential to Laurie. Laurie eventually became one of his right hand people who participated in many projects and programs with him (I. #1, p. 105). She chuckled as she recounted how recently this principal, who was enroled in a university course, asked her to complete and mail a confidential questionnaire rating his leadership abilities to the professor (I. #2, p. 19).

In her first year of teaching, Debbie encountered problems with her male vice-principal. She did not receive support in matters of classroom discipline that she might have received had she been a male. When she sent students to the office she expected that they would be disciplined and perhaps sent home, but not back to her class. The vice-principal did this "quite often" (I. #1, p. 134) to Debbie and to her female colleagues. However, when male teachers sent offending students to the office the offenders were not returned to class. Upon reflection Debbie

was not sure if the vice-principal's action was because she was a rookie teacher or a female teacher, but maintained "he had a habit of not supporting his female teachers" (I. #1, p. 134).

Laurie observed discrepancies in the way young, new, female and male teachers were treated by male administrators. She noted that "young, female Science teachers [seemed] to come under a lot more scrutiny in terms of their classroom management skills ... from the male administrators than [did] the young male teachers that [were] newly hired" (I. #1, p. 26). While Laurie acknowledged that the scrutiny might be because their teaching styles and other teaching variables were different, she also maintained that some of the newer female teachers were very petite. The smaller stature of the younger, newer, female teachers might have made it more difficult for young females to deal with larger male students. Reflecting on the issue, Laurie said,

> I'm not particularly short myself, so I don't usually have that kind of problem. But some of the newer [female teachers] are smaller in size and so they might find it more difficult. I remember when I first started teaching, it was very intimidating because you felt the senior students weren't really that much younger than yourself. Sometimes you would ask yourself, "What right do I have to stand in front of the class?" "What am I doing here?" ... But you get over that pretty quick. (I. #1, p. 26)

Laurie maintained that it was intimidating for new teachers, whatever their gender, when they began teaching as all new teachers had to learn how to set the tone in their classroom and how to manage their students. She wondered if second career teachers would have an advantage when starting their careers, because they were perceived by students as being more experienced than they really were. Laurie also speculated that part of the problem young female teachers had may rest in the difficulty some women have in learning to be assertive without being perceived as whiny. Assertiveness, she thought, seemed to come more easier to men (I. #2, p. 29 and 30; I. #1, p. 26).

Just prior to her third interview with the researcher, Laurie attended a promotion meeting

where teachers discussed the student failures in their classes. Two teachers, an older, experienced male and a younger, inexperienced female, both had extensive failures in their grade 9 and 10 Science classes. The male had used an exam that he had used for a number of years, so he knew it was not any harder, but he still had a difficult time trying to calculate passing marks. Since he had a long list of failures, he was expecting to be challenged by the principal, but was not. The young, female teacher, who had a similar situation with failures, was challenged by the principal on her failure list. She had to change some of her grades whereas the older teacher did not. In reflecting on this situation Laurie observed that,

> it could be partly gender related but it could also just be plain experience related as well. [The administration] want to make sure that the younger teachers have the right kind of weighting and are passing the students who should pass. Some of the younger teachers don't know. There's some of those borderline kids [over which teachers waver] – should they pass them or not? And they waver back and forth. Whereas some of the senior teachers, the principal will say, "40%?" And the older teacher will just say, "Yep." (I. #1, p. 10)

Laurie maintained that, with experience, a teacher knew that sometimes she would get classes with many academically weak students. She stated that an experienced teacher was

> consistent enough in [her] delivery and [her] evaluation that the administration doesn't question [her] too much about [student marks, assignments, and failures] anymore. Whereas when [she's] younger maybe [her] tests are too hard, or whatever. So [she does] tend to be questioned about that more frequently. (I. #3, p. 14)

In reflecting on past administrators, Laurie noted that some had been slightly condescending, but that she had never considered their behaviour in terms of gender.

> Some administrators have been very fatherly, I guess maybe a little bit condescending, "taking under their wing" kind of thing when you're a young female teacher.... Some of them have been very, very supportive. I never really thought about it in terms of a gender issue, I guess maybe I should have, but I've never been that sensitive to that. I've always been a person first and a woman second. (I. #3, p. 73)

Carole, who taught in a French Immersion program, believed her gender may have played

a role in her class assignments. Although qualified to teach both Math and Science, when she was initially hired she was assigned an English-language Family Studies class rather than an available English-language Math class. In another instance she lost a grade 11 English-language Chemistry course to a newly hired male teacher, who supposedly had specialist qualifications. Later Carole learned this was not true since he was acquiring the specialist qualifications at the time of her interviews for this study (I. #1, p. 72, 84, 91, and 232). Of this incident, Carole laughingly stated, "But I don't say much. I take it as it comes. As long as I work in Science, I'm happy" (I. #1, p. 84). Carole also thought that men seemed "to get more of what they [wanted] because they [spoke] louder" (I. #1, p. 98).

With the introduction of Ontario's "new curriculum" which was phased in over four years beginning in 1999, Carole found herself the only Science teacher assigned one or two new courses to teach each year. Even in September 2003, she found herself teaching the new Grade 12 Physics.

> They gave me Grade 9 first when we had no books - nothing. I put it in place. Then they gave me the Grade 10 the next year - no Grade 9. So I had to start over again. The year after, they gave me Grade 11 Chemistry and Grade 11 Physics. The year after they gave me Grade 12 Chemistry and this year I have Grade 12 Physics. I don't have time to stay in one subject a long time. But now it's better. Now I have all the French: Chemistry and Physics Grade 11 and 12, and Grade 10 Science. (I. #1, p. 100)

Being the first teacher in the school to teach the new courses required a great deal of time and effort in planning and preparation. However, despite the additional work the new courses involved, she maintained a positive attitude and asserted that she loved the experience she gained and that she was now familiar with the new Science curriculum in all grades (I. #1, p. 102).

Marlene found that a certain group of young male teachers were treated more favourably than the rest of the staff by her female principal. She referred to them as the golden boys' club.

While most of the staff offered extra-curricular activities for the students and sat on school committees, the young male teachers in the golden boys' club did not. Marlene asserted that they wanted their noon time free and they left work at 3:10 p.m. However, when opportunities for professional development arose, the principal gave them the first opportunity to attend (I. #1, p. 65).

Maternity Leaves. Several women encountered difficulties associated with maternity leaves. Laurie, who taught in a smaller, rural school board prior to the provincial government's imposed school board amalgamation in 1997, found maternity leave contract terms inadequate and fought to change these while she sat on the local union's negotiating committee.[15] She explained that it was standard practice that women would lose their seniority and were hindered in accruing teaching experience and seniority when they took maternity leaves. Women returning from maternity leaves were often given part-time timetables and assigned additional supply work, which meant that they were really working full-time. Those employed on a part-time basis did not accrue full-time seniority, even if they worked full days with the additional supply work. Laurie explained,

> one woman was explaining to me once that even though she'd been teaching for over twenty years, ... some of that part-time and some ... full-time and [with] her leave in there, she'd only actually accumulated about 12 years worth of experience.... – which was a real problem. Now recently we've got into the contract where you [can] take a part of the year off to have a maternity leave, or whatever kind of leave, [and] you still accrue your seniority. So you don't lose your place in the seniority list, whereas in the old days you did. They've improved that quite a bit. What they used to do too, to a lot of women, [was] ... put you on part time and then fill you in with all these little hodge-podgy courses - wherever they could stuff you in, but they wouldn't give you full-time.

[15]It is difficult to succinctly summarize the terms associated with maternity leave as the participants belonged to four different school boards prior to the imposed amalgamation in 1997. Now the participants belong to two boards. Those maternity leave terms not mandated by federal or provincial legislation can be dealt with in teacher contracts and are subject to negotiation by the board and its teachers, and therefore can vary from board to board.

> Then they would be able to fill in your time-table with supply work and things like that. So it was very frustrating for these women to try and get full-time jobs. (I. # 1, p. 20)

Although working "full-time" but without "full-time" contracts, these women would not receive the same benefits as their full-time co-workers. As the only woman on the local Ontario Secondary School Teachers' Federation's (OSSTF) six-member negotiating team, Laurie found that the males always asked for maternity leave benefits but quickly relinquished them as concessions. The male negotiators were under the impression that a woman had a second income in her spouse and therefore maternity benefits were not important. After researching the issue, Laurie showed them they would save money by replacing an experienced teacher going on maternity leave with a new, young teacher, and that it made sense to put some of that money back into their loyal employee.

When Laurie had her first maternity leave in 1997, she was able to negotiate a deal with the board where the board would take some of the money they had saved by hiring someone who would earn half her salary, and put it toward a specified number of days' salary for her. The board's action enabled her to stay off for four months with her first child. Being the primary income earner in her family, Laurie found her maternity leave difficult because unemployment insurance benefits were capped at about one-quarter of her regular salary, and unlike teachers in the local Catholic Board, she was not paid 95 percent of her regular salary (I. # 1, p. 68).

Laurie maintained that currently women were allowed to use up to six weeks of their own accrued sick days, which were accumulated on a yearly basis. The sick days would be used at the beginning of the pregnancy leave before the woman went on unemployment insurance. Combining sick days with a maternity leave helped a great deal, Laurie stated, because a woman

could then have "six weeks of full salary before [she would] have to go on the severely cut salary" (I. #1, p. 69).

When Laurie's daughter was born in 2001, maternity leave conditions had changed from her first leave in 1997. If the woman had enough sick days accumulated she could also take six weeks paid leave after the baby's birth, provided she had a doctor's note stating she was recovering from birth and could not return to work immediately. As Laurie explained,

> it takes about six weeks to recover [from a pregnancy]. There had been a test case down in southern Ontario where a woman had taken [her school board] to court and the doctors had all agreed that six weeks was reasonable for the actual physical recovery from a birth. (I. # 1, p. 71)

As a result of action taken by her school board's female Human Resources person, Laurie found her second maternity leave in 2001 very stressful. After being informed that she could have the six weeks sick leave with pay after her child's birth, Laurie learned shortly after her delivery that the Human Resources person had told her obstetrician not to sign any note for Laurie unless Laurie was physically incapacitated and recovering from an abnormal birth. Eventually Laurie was able to obtain her sick leave pay after contacting her union representative and the new Director of Education (I #1, p. 71 and 75).

Laughing, Laurie also said that indeed, the one gender issue that arose on a regular basis was that of pregnancy leave. She maintained that "the administration ... [tended] to let you feel that you [were] inconveniencing them" (I. #3, p. 111). A woman taking a pregnancy leave caused administrators staffing problems as a replacement teacher would need to be hired. Laurie's principal, however, was very supportive in providing an area where she could breastfeed her two babies and in finding alternative supervisory duties for her at lunch time so that she could breastfeed.

Nancy asserted that her career was not impacted by her maternity leaves. She was only

able to take six months off for her children rather than the one year women can now take. She also asserted that maternity leave was a hindrance in terms of salary because she only received 54 percent of her teaching salary (I. # 1, p. 90).

Karen maintained that maternity leaves did not affect her career. However, she did have to make some sacrifices to ensure her career was not hindered by her two pregnancies. She laughed when she claimed that she purposely timed the delivery of her two children for June 30. During her first pregnancy, Karen did not apply for a maternity leave nor did she inform the board of her pregnancy. She took no sick days off, helped plan graduation, and then had her child. Since her school was scheduled for closure, she was declared redundant, but because she had a permanent contract, the board had the obligation to find her a position. She was aware of an impending retirement at her current school, and knew she was next in line for the position, which she wanted. Had she taken a maternity leave, someone else would have had the job. Being "bound and determined to stay at her present school" (I. #1, p. 143), Karen had her second child at the end of June and limited her maternity leave from September to Christmas. She did not take the entire semester off because she did not want the administrators posting her job.

> I took from September until Christmas and then I went back before the semester was over. That was very specific, too, because had I taken the full semester [the administration] would have posted my job. Instead of a long term supply [the job] just gets classified differently. I don't know if it's still the same way, but I knew if I came back within a semester I would come back exactly to my job – in my school, on the timetable it would say my name. (I. #1, p. 141)

In summing her experience up, Karen maintained that while she did take a maternity leave, she totally geared her pregnancy around her job (I. #1, p. 138, 139, and 144).

Laurie maintained that sometimes "women [were] their own worst enemies [and were] not as supportive [of each other] as they should be" (I. #3, p. 114). She made this claim after recounting an incident when she was negotiating for increased unemployment insurance for

teachers' maternity benefits and encountered a woman on the board's negotiating team who was unsympathetic to maternity concerns. The woman belligerently asserted: "I never had any help when I was having my babies, so why should we help you guys out?" (I. #3, p. 114).

Maternity leaves were not an issue for either Carole or Debbie, since Carole entered teaching after her children were grown and Debbie had no children, neither participant required a maternity leave.

The Subtle Impact of Family. Gender, Laurie asserted, had impacted her career in subtle ways. Being her family's primary source of income, she was reluctant to pursue an administrative position. For her, job security was a priority: Once a teacher moved into administration, she would lose her union protection and job seniority. Moreover, Laurie's new school board was geographically huge and those in administrative positions, such as principal and vice principal, had to be willing to relocate or to commute long distances. In northern Ontario this could translate into commutes of over 100 kilometres. With a young family, Laurie was not prepared to drive long distances, especially in the winter, or to uproot her family on a regular basis. She wanted to provide her children with a stable environment (I. #1, p. 57 and 65).

Conclusion

The women Science teachers who participated in this study led very busy lives and attempted to balance the demands of teaching with those of family. There were many commonalities presented in the women's responses. They were all very busy managing different roles within the school setting and all could be considered a team player. Each was perceived as a competent teacher by administrators, parents, and in most cases, students. A couple of participants asserted that how others perceive a teacher's competence may be related more to the teacher's age than to the teacher's gender. None of the women aspired to becoming a principal or vice-principal. Most had observed a number of trends in education over the course of their

careers, including an increase in the number of women Science and secondary school teachers, a decrease in student enrolments within their schools, an increase in the number of girls enrolling in senior level science classes and pursing post-secondary Science, and an increasing number of disrespectful students. The women observed that recent provincial government legislation had many repercussions for them, most notably an increase in workload, but also increased isolation and stress among staff members, increased hostility among staff, a depressed atmosphere, apathy toward union and contract issues, a reduction of in-school administrative positions, the creation of unwieldy multi-subject departments, and dirty classrooms. Teaching styles of the participants were varied.

Many of the participants made reference to some aspect of family. Issues that arose concerned the difficultly involved in balancing the demands of teaching and family, including the impact of family on career aspirations and educational opportunities, and teachers having to assume more parental responsibilities. A couple of women perceived men to be able to better balance family and teaching demands.

Generally, interaction between these women and administrators, support staff, parents and students, was positive, but there were exceptions. These exceptions included isolated incidents of discrimination; increased teacher isolation and hostility between staff members as a consequence of government cutbacks; and school principals who gave some groups preferential treatment, who were unsuccessful in integrating newcomers into the staff, or who were too inflexible in applying rules. Some of the participants made a conscious effort to interact positively with staff and support staff.

Each of the women participants did not believe that being a female Science teacher was an issue. For the most part being a female was not an advantage in their being hired, although Karen thought it might have worked to her advantage when she was hired as Department Head.

Discrimination on grounds of gender was a concern for some participants. Gender-based discrimination manifested itself in the assignment of classes, in a vice-principal's dissimilar treatment of male and female teachers, in the treatment of new teachers or male teachers by some administrators, and in the treatment of young female teachers by older male students. Legislation and contract agreements involving maternity leaves created challenges for some of the participants.

CHAPTER FIVE

Interpretation of the Findings

Introduction

This chapter includes an overview of the study, the interpretations of the findings, conclusions, and recommendations.

Overview of the Study

The purpose of this study was to determine in which ways feminization of secondary school teaching has occurred. This study was framed around two focus questions: 'What are the experiences of women teaching in Science, a subject area traditionally dominated by men?' and, 'In the educational setting, how are these women treated by others?'

The participants in the study were six female secondary school Science teachers from two northern Ontario school boards. Their teaching experience extended from 9 to 20.5 years. Each participant was interviewed three times in interviews ranging from thirty to sixty minutes in length. The first interview gathered background information on the participant and focused on the ways she believed being a female teacher had impacted on her career. The second and third interviews focused on the participant's experiences as a female teacher.

Experiences of Women Science Teachers

An Increasing Proportion of Female Teachers. The responses of five of the six participants indicated that they had witnessed an increase in the number of female Science teachers in secondary schools. These findings indicate that the occupation of secondary school teaching may be currently at the second stage, in what Bradley (1993) characterized as the 'invasion stage' of feminization, where the occupation becomes integrated or gender-neutral. The presence of four factors, noted at the school and provincial levels, suggested that the

'takeover' stage of feminization had not yet occurred. The first factor that male teachers were still being hired in the schools, suggested that men have not exited the teaching profession. The second, secondary school teaching is not yet considered women's work. As Giguère (1999) asserted, "teaching at a higher grade generally seems more acceptable to male teachers – probably because these positions are considered to have more responsibilities and offer more career opportunities" (p. 43). The third, statistics provided by the participants indicated that men still comprised a large segment of the teaching population in their schools. Debbie was the only participant who had taught at a school where there were more female than male teachers on staff. The fourth, Ontario Ministry of Education statistics for 1999-2000 indicated that 50.4 percent, almost half, of full-time secondary school teachers were men.

The 'takeover' phase, however, could be close at hand since Giguère (1999) reported that there had been a sharp decrease in the number of males choosing to enter secondary school teaching. Currently, only 33 percent of Ontario Intermediate-Senior teachers in the under-30 age category were male (Giguère, 1999). Giguère added that "this radical change in the number of males in secondary teaching [had] occurred over the past 15 years and [had] largely gone unnoticed" (p. 43).

More recently, the increasing feminization of the teaching force and the accompanying decline in the number of male teachers has caused governments and researchers concern (Bernard, Hill, Falter & Wilson, 2004; Bradley, 2000; Coulter & McNay, 1993; and Jamieson, 2005). Researchers have based their concerns on the premise that a feminized teaching force is not reflective of today's population.

Other researchers do not seem to view the increasing female and decreasing male teaching populations with as much concern. Mahony (2000) ponders why there are more

concerns now about the decreasing number of male teachers in secondary schools than there were in the past when many fewer females were secondary school teachers. McNay (2001) raised similar questions and noted that when the presence of men in a profession is used to validate the profession, it "serves ... to undermine the role of women in that profession" (p. 140).

Participants' responses suggested that the percentage of female Science teachers was also increasing in northern Ontario secondary schools. Two women in this study suggested that their gender may have worked in their favour when they were initially hired. Nancy perceived that it was "trendy to get more females involved in Math and Science" when she was hired in the 1980s. Similarly, Laurie wondered if her gender had been a consideration in her hiring, because she overheard comments about how administrators had just hired a male and a female (her) Science teacher. These perceptions are validated by Acker and Oatley (1993) who noted that by the 1980s the Ontario Ministry of Education supported incentives to encourage girls' participation in Science and that individual school boards in the province had set up innovative programs. Exposing girls to women working in Science-related fields was one method to increase girls' Science participation.

Over the course of their careers, five of the participants observed an increase in the number of female Science teachers within their respective schools. Their observations were further supported by Ontario College of Education statistics for the late 1990s that indicated a large proportion of male secondary school teachers will soon be retired.

Accepted as Qualified Science Teachers. Contrary to the findings of Epstein (1988), who noted that women entering male-dominated professions, such as engineering, faced gender-based stereotypes about their competence which sabotaged their work performance, the participants in this study, each of whom held university degrees and teaching credentials in

Science, perceived that administrators peers, and parents viewed them as well-qualified and competent. The participants' responses suggested that more women were teaching senior Science courses and more were being hired, or promoted, to fill in-school leadership positions, such as department head or lead teacher.

Marlene was well accepted by her peers and did not report any discriminatory treatment from them. On one occasion, however, she did experience an isolated instance in which her knowledge base was questioned by a pair of grade 12 boys. She wondered if the questioning incident arose because, being the only female Science teacher at the school, she was the first female Science teacher the boys had encountered. Kanter (1977) found that in a work setting, members of a token group, made up of less than 15 percent of the workers in the organization, would probably experience discriminatory treatment by peers. Thus, Marlene, as the only female Science teacher, could be considered a token. The discriminatory treatment associated with tokenism, however, is usually generated by fellow employees, which was not the case for Marlene, and not by outsiders to the profession, in the case of the students. Wilson (1992) asserted those outside a profession, in this case students, do perceive workers employed in non-traditional roles negatively. Thus, it is conceivable that the boys viewed Marlene negatively because she was teaching in a subject area traditionally dominated by men.

Increase in Female Students Pursuing and Excelling in Science. Women who participated in this study noted that more girls were enrolling and excelling in Science courses at the secondary and post-secondary levels than in the past. Carole noted that "[More] females are now taking Science," while Laurie found that in her senior Biology class she usually ended up with more girls than boys in the class. Other researchers have also noted an increase in the numbers of females pursing Science. Fox (2001), documenting the number of female doctoral

students in the United States, found that the number of women receiving doctoral degrees in the life sciences grew from 12 to 18 percent in the 1960s and 1970s to 36 percent in the first half of the 1990s, and that the number of women receiving degrees in the mathematical, physical, earth, and atmospheric sciences increased from 8 percent to 20 percent during the same period (p. 657). Chapman (2000), after an examination of American education statistics, noted that "the idea that math and science are less important and less appropriate for girls has been discredited" (p. 24).

The presence of female Science teachers may be one factor responsible for the growing numbers of girls enrolling in Science courses and programs. Their presence may indicate, through the hidden curriculum, that women are capable of doing Science and do belong in Science programs. This is supported by Acker and Oatley's (1993) contentions that the dearth of women in post-secondary Science programs in the past, was due to "the scarcity of female role models and mentors" (p. 21).

Other researchers are concerned that the declining numbers of males in teaching may impact negatively on boys' learning and achievement in schools. Bernard, Hill, Falter and Wilson (2004), Bradley (2000), Coulter and McNay (1993) and Jamieson (2005) focusing on the declining numbers of male teachers currently in classrooms, have perceived the lack of male role models as one factor in boys' underachievement in school[1].

However, the question of whether the presence of male role models within the classroom makes a difference in terms of student achievement and in students' perceptions and

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[1]In April 2004, Ontario's Education Minister Gerrard Kennedy stated that the Ontario government was concerned that the shortage of male teachers was contributing to boys' poor academic performance levels (Leslie, 2004).

understandings of gender roles, has not yet been answered (Carrington, 2002; Coulter & McNay, 2001; and McNay, 2001). In Finland, Laheima (2000) found that 13 and 14 year-old students did not think the teacher's gender had any bearing on the quality of teaching they had received; rather, the students valued those teachers who were able to maintain sensitive, impartial and friendly discipline.

The women in this study actively encouraged students of both sexes to pursue Science. Karen made deliberate efforts to encourage girls to take Science. Such action might also be responsible for the increased enrolment of girls in Science. Their actions differ from those of the mostly male British Science teachers, studied by Acker and Oatley (1993), who supported statements advocating traditional roles for women and who may have been unintentionally relaying their beliefs that females should not be pursuing Science, to students through the hidden curriculum.

Marlene's assertion that her teaching style differed from that of most of her male colleagues suggested that females taught Science differently and that this could be another reason for the increase in the number of girls enrolling in Science programs. Earlier writers, such as Kahle (1989), asserted that Science had been constructed from a masculine standpoint and had been taught in ways that seemed to favour boys' learning styles. Sadker and Sadker (1994) concurred with the earlier findings and asserted that, because of their out-of-school experiences, boys entered Science classes with an advantage:

> From their earliest years [boys] play more with toys that call for tinkering and exploring. They are more likely to make something out of junk, read science articles and books, talk about science with a friend, and have a science-related hobby. (p. 123)

Girls who perceived science as a subject geared toward males, participated "less in science

class, [allowed] boys to take over lab equipment and [watched] male students conduct scientific demonstrations" (Sadker & Sadker, 1994, p. 124). In science classes, boys were found to speak louder and more frequently than girls and, when praising students, teachers tended to give boys more praise, constructive criticism, and help (Sadker & Sadker, 1994, p. 55). Mahony (2000) noted that researchers studying the impact of feminization assert more male teachers are needed "to counteract the exposure of boys to too much girl-oriented teaching, material, and pedagogy that threatens their maturation into 'real' men" (Mahony, 2000, p. 773), suggesting that the influence of female teachers on the hidden curriculum affects boys negatively.

However, the women in this study employed a wide variety of techniques to teach Science and students of both sexes were being successful. Marlene, for example, maintained that she was more at ease with her students in a personal way and used Science as a vehicle to teach students how to become life long learners. Carole, maintained a relaxed atmosphere, encouraged students to maintain a positive attitude, and frequently utilized humour in her lessons. Laurie and Karen tried to incorporate visuals.

Unlike Marlene, however, the other women in the study did not think a teacher's sex had an impact on teaching style. Although Debbie stated that all the Science teachers at her previous school – all of whom were female, employed similar teaching styles, she did not believe a teacher's teaching style was determined by sex. Rather, she asserted that the grade, course level and course material influenced the teaching style. Karen also maintained that it was the subject that determined the teaching style rather than the sex of the teacher. Considering that the hidden curriculum influences student achievement, perhaps the positive attitudes of these women and their diverse teaching styles contributed to the success of female and male students.

The participants themselves were unsure of the impact they had on the decisions of their female students to pursue senior Science courses in secondary school. It should be noted that the new Ontario Curriculum introduced in 1999 did place a greater emphasis on Science; the number of compulsory Science credits required for graduation was increased from two to three. However, despite the increase in compulsory Science courses, girls are opting to take more than the three required Science credits. While unsure of her impact on girls' decisions to pursue Science at the secondary school level, five of the participants did perceive herself as having some impact on her students' decisions to enrol in post-secondary Science programs.

A Decrease in the Student Population within the School. The decision of parents to have smaller families, the migration of families to urban centers or to southern Ontario for better employment opportunities, and the elimination of the fifth year of high school, all contributed to declining school enrolments. Each participant noted that, since she began teaching, the student population within the school had decreased. A declining school enrolment resulted in Debbie and Karen being declared redundant; each woman was forced to transfer to another school to retain a job. Debbie was declared redundant several times.

Fewer students within the school also resulted in smaller teaching staffs within each of the participants' schools. Participants noted that with fewer teachers available to teach a secondary school program, some teachers were forced to become more versatile and teach in disciplines other than Science. Laurie, for example, believed that this situation made the distinction between departments 'hazy' and helped to make her staff more homogeneous by forcing teachers to work more closely with colleagues in other departments. Similarly, Acker (1999) found that greater collegiality developed between staff members after their workloads were increased by British curricular and assessment reforms.

Uninterested in Administrative Positions. Montecinos and Nielsen's (1997) findings that female teachers were less likely to enter education with the goal of pursing an administrative career than their male counterparts was supported by the findings of this study. None of the participants had intentions of pursuing the administrative positions of principal or vice principal. Karen, Debbie, and Laurie, however, were willing to accept other leadership positions within the school, although Karen required encouragement from her principal before she considered applying.

Lee, Loeb, and Marks (1995) asserted that "the most common explanation for the lack of female control in schools is that women teachers do not want it" (p. 261). Responses offered by Carole, Karen, and Marlene, supported Lee, Loeb, and Marks' findings. Carole was not interested in an administrative position because she wanted to teach; teaching was her 'dream job.' Biklen (1995) asserted that women teachers often devalue and distrust educational administration positions, believing that teaching is the more desirable position. Female elementary teachers in Biklen's (1995) study criticized administrative positions because "administration [was] removed from children and [wasted] the talents of those skilled practitioners who [were] needed and valued" (p. 39). Comments by two participants in this study suggested that they supported Biklen's findings. Carole, for example, asserted that being a teacher rather than an administrator was her dream job, while Marlene remarked that the only way teachers could advance was to become administrators, "when really they [were] excellent teachers and ... should [be kept] ... in the classroom." Even those women in this study who accepted leadership positions such as department head and lead teacher, were able to continue teaching while they contributed to school decision-making without having to become principal or vice principal. Biklen (1995) also asserted that the occupation of teaching, particularly elementary teaching, has been labeled as 'careerless' because, until recently, it has been

"structured without the possibility of promotion within teaching" (p. 26). Consequently, any teacher who wanted to advance had to become an administrator and leave teaching, an action teachers in this study were reluctant to take. However, working within secondary schools, Karen and Debbie were able to hold leadership positions that enabled them to continue teaching.

Gutmann (1987) asserted that fewer women pursue administrative careers because of the gender roles that men and women have traditionally assumed, and continue to assume, within the family. As previously noted, this was not a reason why women were not pursuing administrative careers in this study; most women perceived teaching as the more desirable position. Laurie, who assumed the role of primary breadwinner in her family, was reluctant to consider an administrative position because it would result in a loss of job security and long commutes to work.

Had the participants in this study been interested in assuming leadership positions, they would have found the number and type of in-school leadership positions reduced by provincial government legislation in the late 1990s which forced school boards to restructure their schools' internal administrative structures resulting in fewer leadership positions within a school.[2] Departments that were once centered around one or two similar subjects were replaced by large multi-subject departments. While a nominal salary was attached to the leadership positions, there was no scheduled administration time in which to complete the work.

Teaching as a Calling. Besides teaching classes and completing all the tasks teaching

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[2]When announcing the provincial government's new student-focused funding formula for education in 1998, Education and Training Minister Johnson stated that school boards would be expected to find "efficiencies and reduce waste" in non-classroom spending (Jefferson, 1998, p. 4). Johnson maintained that non-classroom spending included "Board Administration, Department Heads, Directors and Supervisory officers, and Custodial and Maintenance" (Jefferson, 1998, p. 4).

involved, the women in this study voluntarily engaged in other school activities such as mentoring students and student teachers, participating on committees, coaching teams and clubs, and serving on union committees. The many hours beyond the working day suggested that they viewed teaching as a calling. Their dedication to their profession appeared much like Hansen's (1995) description of teaching as a calling or vocation. He stated that "for [an activity] to be a vocation [or a calling], it must yield social value to others. It must be educative, edifying, helpful to others in some characteristic way. ... A vocation describes work that results in service to others and personal satisfaction in the rendering of that service" (p. 3).

In their study of pre-service teachers, Cammack and Phillips (2002) also found women who perceived teaching as a calling, defining calling "as the profession one was 'born to do'"[3] (p. 127). They asserted that the female participants in their study may have perceived teaching as being ideally suited to women because, as women, they identified with being caregivers or nurturers. Cammack and Phillips found that when their female participants discussed their plans to "save children" through nurturing and caring, the plans for nurturing and caring "often included off-duty time and personal expense" (p. 128). While none of the women Science teachers in this study stated that they were born to be teachers, their descriptions of their experiences suggested that they did perceive teaching as a calling rather than just a job. The actions of the teachers in this study also suggested that nurturing was an important component of the job – a component that consumed much of their time. Karen, for example, talked to her students "about the nobility of being a teacher" and how there was no occupation "with greater impact ... than being a classroom teacher" whenever they expressed concern that she was under-employed as a teacher. She used the opportunity to teach her students that one's occupation did

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[3]This does not mean that men cannot perceive teaching as a calling as McNay's (2001) study of a male second career grade one teacher demonstrated.

not determine one's success, rather "it [was] how you [did] your job and what you put into it." Marlene used Science as a vehicle to teach students how to be life-long learners rather than just teaching Science content.

An attitude held by women in Cammack and Phillips' (2002) study was that the best teachers were those who incorporated dedication to students in their teaching. They found that some of the women in their study judged teachers' dedication, as measured in terms of their caring and service, as being more important in determining a student's success than factors such as socio-economic status, race, or gender. Women Science teachers in this study also incorporated caring and dedication into their teaching, factors that may have inspired more students, including female students, to enrol in Science.

However, the danger with teachers' tradition for caring, Acker (1999) noted, is that "caring for others and not oneself can become self-sacrifice and a recipe for exploitation. Persons working in the so-called caring professions are described over and over again as being exhausted and overstretched" (p. 196). Over the course of her career, Marlene observed that teachers were being required to assume more responsibilities, many of which had formerly belonged to parents. This observation was also made by Acker (1994), who noted that the teacher's role is "infinitely expanding" (p. 102). As a consequence of the additional demands, Acker (1994) maintained, conscientious teachers "work harder and harder just to keep going" (p. 102), behaviour adopted by teachers in this study as a response to increased legislated government demands.

Acker (1994) further cautions that "caring is 'work' and we must stop thinking of it as a natural, unrewarded, adjunct of women's work. To the extent that women have other choices, they may be less and less willing to work selflessly in the service of a mission (teaching included) that does not include their own best interests" (p. 196). Moreover, viewing teaching

as a calling reinforces a pervasive conception that teachers "do what they do mostly because they care so deeply about children" (p. 19) rather than emphasizing that teaching is work, teachers are workers and the school is a workplace (p. 19).

> An emphasis on teaching as 'work' serves not only to highlight the tension between 'work' and 'profession', but also speaks to a difference between work and non-work, the latter associated with the notion of women doing 'natural', quasi-maternal 'caring'. (p. 19)

Moreover, by emphasizing teaching as work, one realizes that, like other workers, teachers "can be exploited and that their work can be altered or their workload increased without their consent" (p. 19).

The Relationship Between Teaching and Family. Teaching has been viewed as an extension of women's role in the home (Court, 1997; Vaughn-Roberson, 1992). Court (1997) asserted that in Western cultures, "beliefs that differences between men and women are "natural" have fed into historically constructed splits between the (male) world of public affairs and the (female) world of private relations" (p. 18). As a consequence of their biology and child-bearing capacities, women were perceived as naturally suited to the roles of mothers and wives and responsible for unpaid domestic labour, while men's different attributes made them suitable for roles concerned with competition, ambition, and paid labour (Court, 1997, p. 18). Within Western masculinist culture, women's work has been judged as inferior to men's work. As Court (1997) asserted,

> This judgement is linked partly to social constructions of the private world as a sphere of human experience that has secondary importance, and partly to constructions of women's nurturance as merely part of their natures – instinctual. Such arguments have legitimized the ignoring or devaluing of the work and skills of nurturance, whether this is carried out within a love or family relationship or within the paid labour market. (p. 18)

Once women began entering the labour market, the ideology of domesticity, which emphasized women's nurturing abilities, provided a rationale for their role as teachers (Biklen, 1995;

Vaughn-Roberson, 1992). Teaching was viewed as an extension of women's role in the home.

The experiences shared by the women in this study suggested that a complicated relationship existed between teaching and family life. They discussed the difficulties involved in balancing the demands of teaching and of raising a family. Demands inherent in teaching often impacted their family commitments. Researchers acknowledged that teaching was a demanding occupation. In an examination of gender issues prevalent within teaching, especially within elementary schools where teaching is feminized, Griffin (1997) asserted that,

> teachers, responsible for the educational, physical, and emotional lives of students, have no time out. The incredibly time-consuming work of consulting with students and responding sensitively to their emotional needs is not part of the teaching schedule. (p. 11)

To fulfill the demands of their jobs, the participants in this study did sacrifice their personal time, often at the expense of family. Karen, for example, asserted her family "sacrifice all year" because of her job commitments. Carole, who had no familial demands on her time, wondered how teachers with families coped with the workload. Biklen (1995), in her study of female elementary teachers, found that teachers believed the only way they could fulfill their ideals of good teaching was to sacrifice their personal time. As with the participants of this study, Acker (1994) found that "school follows teachers everywhere" (p. 118) and that nearly all the teachers in her study "thought about school while at home"(p. 118). While teachers in her study, and in this study, attempted to keep some separation between work and home by coming to work early, working through lunch, and often working after school, attempts at separation were not always successful. Laurie and Nancy, for example, each discussed how she tried to finish school work by 5:30 p.m. because she was just too tired to do it once her children were in bed, and Carole talked about taking her work with her on weekend trips.

Family obligations caused women in this study to place limitations on their careers and

not pursue some available opportunities. Karen opted to not pursue a masters degree after seeing her daughter's facial expression and realizing that her family would need to make additional sacrifices. Laurie, the mother of two young children and the primary breadwinner in her family, was reluctant to pursue an administrative position because she was concerned with retaining job security and stability. She was also unwilling to make lengthy daily commutes to work or relocate her family – actions sometimes required of vice principals and principals when they were transferred to other schools within this large board. Acker (1994) noted that while teachers planned careers, their career plans were "provisional and changeable, especially but not exclusively for the women" (p. 111). According to Acker, the career structure for women teachers is complicated because it is "influenced by family stage and the work needs of teachers' spouses, as well as by unexpected life events" (p. 111).

The taking of maternity leaves to have children created complications in the careers of four participants. Maternity leave benefits varied from board to board and, while complying with government legislation, were determined by individual school board contracts negotiated by the school board and the local teachers' union. Laurie, who served as chief negotiator for several years, noted that when she first began teaching, maternity benefits were perceived as unimportant by male negotiators because the woman's income was viewed as a second family income. Consequently, maternity benefits would be used by the unions as a bargaining chip and relinquished for other concessions. Women lost seniority and benefits and received capped unemployment benefits while on maternity leave. Teaching, as Laurie observed, was seen by negotiators on both sides of the bargaining table as part-time profession for women who were secondary wage earners within the family. Acker (1999), Biklen (1983), and Coladarci (1992) have asserted that since women teachers frequently left teaching to raise families, women were perceived as having a low career commitment and lack of aspirations. As Acker (1999)

maintained, "In the past, women with domestic responsibilities were thought to be by definition not committed to their careers and the whole social structure reinforced that difficulty of becoming committed" (p. 195). Taking a maternity leave impacted on the job a teacher was assigned when she returned to work. Realizing that a maternity leave could result in her being assigned to a different school and to a different teaching position upon her return, Karen timed her pregnancies for the end of June, and then took either no, or abbreviated, maternity leaves. Karen's thoughts about the negative impact of maternity leaves on her career echoed those given by participants in Acker's (1994) study. As Acker (1994) found,

> Women who had children were thought to experience further disadvantages. Either they carried on, with only a short break for maternity leave, or they were faced with returning to a lower-status, often marginal position. (p. 115)

When asked how she was a role model to her students, several participants chose to incorporate the concept of family into her response. Karen, for example, hoped she demonstrated that being a mother was important, while Laurie talked to her students about balancing work and family, and kept a family photo on her desk. Because she was very involved in school-related activities, however, Marlene feared she did not do an adequate job of modeling the balancing of work and family demands. The actions of these women in demonstrating the importance of family to students, supported findings from Acker (1999) and Griffin (1997) that female teachers blurred the boundaries between home and school.

Acker (1999), for example, asserted that teachers' professional and personal lives 'slip and slide' together because school and domestic lives cannot be totally segregated (p. 79). Teachers may attempt to "cover up their domestic demands as the discourse of professionalism seems to allow no competing commitments" (p. 79). In discussing the relationship between family and work life, Biklen (1995) maintained that current beliefs about professional careers

include heavy workloads and significant time commitments which women must give priority to if they are to succeed. Women's "biographies rather than the structure of the career are expected to alter" (Biklen, 1995, p. 26). Thus, Karen found it necessary to time the delivery of her children for the end of June to ensure she obtained, and later retained, the teaching position she desired.

The relationship many female teachers have between teaching and family has affected the status of teaching as an occupation. Bilken (1995) asserted that those holding traditional sociological perspectives view female teachers as lacking career commitment because women, especially in the past, have left teaching to have and raise children and then return to teaching. Rather than focusing solely on their careers, these women teachers "balanced teaching responsibilities on the fulcrum of family life" (Biklen, 1995, p. 35). Biklen (1995) maintained that such perspectives have taken male working patterns as normal and have not considered the realities of women's lives. However, despite temporarily leaving teaching to have and raise children, women perceive themselves as having both coherence and commitment in their working lives (Biklen, 1995). Thus, Karen, Laurie, Nancy and Marlene, who each took time from her career to have children and then balanced the demands of raising a family with teaching, each perceived herself as committed to her career.

Increased Workload, Isolation and Stress. Researchers raised serious social, economic, and political concerns relating to the feminization of the elementary teaching panel. DeCorse and Vogtle (1997) and Giguere (1999), for example, asserted that, historically, when the gender ratio in an occupation favoured women, wages paid to those in the profession often decreased. While the women in this study did not experience a reduction in wages, they did experience an increase in their workload because of changes in government legislation that focused on revamping Ontario's education system. Government limitations on salary increases

meant that the major increase in workload that these women experienced was accompanied by a very small increase in salary.[4] Legislated changes to the education system resulted not only in a heavier workload for these women, but also contributed to isolation amongst their staffs and to increased levels of stress.

The women in this study observed that the legislated changes to Ontario's education system also contributed to stress and animosity among staff. In one school board, teachers were sometimes required to do on-calls, also referred to as internal coverage or supply teaching of absent colleagues' classes, as a teacher assigned duty. Participants noted that the assigning of on-calls increased tension and hostility among staff members and contributed to teacher stress. Teachers receiving on-call assignments complained about the absent teacher and about the burden being placed on them by administrators. Some teachers, such as Carole, who did not want teachers criticizing her for being absent and having to do an 'on-call' for her, went to work when they were ill and entitled to take sick days. Recognizing that fellow staff members would cover their classes, some teachers, such as Marlene, attempted to design self-contained lessons that were easy to administer. However, creating such lessons placed an additional burden upon the absent teacher.

Researchers found that feminized occupations lost status and became negatively stigmatized, creating economic repercussions for the occupation. DeCorse and Vogtle (1997) asserted that, historically, serious social, economic and political repercussions accompanied the feminization of an occupation. Glazer (1991) maintained that because teaching is considered women's work, it is characterized by "a lack of autonomy, low salaries, and weak status" (p. 329). Macdonald (1995) asserted that the recent policies of Canadian governments in all

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[4]The increase helped defer the costs associated with the rise in inflation.

jurisdictions that have aimed to reduce the state's role in the economy and to curb government spending, have resulted in new models of private sector management – including lean production, total quality management, and flexibility – being applied to public sector jobs, such as public school teaching. Women are affected because they are disproportionately represented in the public sector and have had their best job opportunities in this sector (Macdonald, 1995). As a consequence of government legislation, the women in this study experienced an increase in their workload, an increase which had negative social and economic consequences. Legislation required teachers to implement a new curriculum while reducing the number of Professional Activity days available to work on it. The implementation of Bill 160 increased the number of courses some teachers taught during a semester, required teachers to complete 'teacher assigned duties' (TADs), and increased the number of instructional days. The increased workload imposed by the legislation stifled interaction and increased isolation among the staff at Nancy, Laurie, and Marlene's schools. Carole and Karen noted that the assigning of on-calls increased tension and hostility among staff members. Carole was reluctant to take the sick days to which she was legally entitled because she feared criticism from her colleagues who would have to do on-calls for her. Carole's comment that, "[if] you have tired teachers, stressed teachers hating each other, you can't have a good education," suggested that school climate was negatively affected by the increased workload. Other legislated changes that required teachers to continually upgrade skills and knowledge, and to offer extra-curricular experiences for students, increased pressure on teachers such as Karen who had always done these things. Interestingly, the introduction of Ontario's Bill 160 occurred when the number of female secondary school teachers was almost equal to the number of male secondary teachers and when large numbers of male teachers were predicted to retire.

How are these Women Treated by Others in the Educational Setting?

The second focus question around which this study was based, examined how these women were treated by others in the educational setting. The participants' stories suggested they were held in high esteem by their administrators, and by most parents and students. While all participants maintained they enjoyed positive relationships with all members of their staffs, concerns pertaining to discrimination, favouritism, and respect emerged.

Interaction with Administrators. Each participant perceived that the administrators with whom she worked considered her to be a competent, qualified Science teacher. Having earned at least two university degrees – a Bachelor of Science and a Bachelor of Education, each participant was well qualified for the position of Science teacher. Debbie, also had a Master of Science degree. Karen, Laurie and Carole also shared stories that showed they were viewed highly by administrators. Early in her career, for example, Karen's former principal was so impressed with her performance that he encouraged her to consider the assistant department head position. Karen won the position and a few years later she was hired as the Science department head after competing against some highly qualified Science teachers from other local high schools. Laurie was held in such high esteem by her principal that she became "one of his right hand people" and was asked to participate "in a lot of projects and programs with him." Administrators demonstrated a high opinion of Carole by having her teach and prepare materials for several new Science courses. The experiences just related suggest that Grumet's (1988) findings that many female teachers thought male administrators had a low image of them, were not correct. However, some of the participants shared stories that also validated Grumet's (1988) findings. Debbie and Laurie each recounted a personal story of how a male vice-principal treated her, or her female colleagues, differently than her male peers in terms of expectations and student discipline. In her first year of teaching, Debbie perceived that she did

not receive the support from the vice principal regarding classroom discipline that she might have received if she had been a male. Students sent to the office by a female teacher were disciplined differently. Laurie also perceived that she was discriminated against because of her gender, when her vice-principal called her, an experienced teacher "up on the carpet for refusing to give an assignment," but allowed her male colleague to defer giving the assignment until the student returned. Carole was certain that her gender played a role in her teaching assignments when she lost a grade 11 English-language Chemistry to a newly hired male who did not have the Science specialist qualifications that male administrators claimed he had. Although Carole's Science qualifications allowed her to teach Chemistry in French, she was assigned an English-language Family Studies class for which she had no qualifications other than being female. The stories presented by Debbie, Laurie, and Carole suggested Grumet's (1988) findings, that some male administrators had a low image of female teachers, might be applicable in some circumstances.

Laurie also noted discrepancies in the way male administrators treated inexperienced male and female teachers, especially in the area of classroom management skills. She asserted that the classroom management skills of young, female Science teachers seemed to come under more scrutiny from the school's male administrators than did those of the newly hired male teachers. While she acknowledged that the discrepancy in treatment might be because their teaching styles differed, Laurie also maintained that some of the new female teachers were "smaller in size" and might have trouble dealing with some of the larger male students. Laurie's comments concerning the treatment of young, new male and female teachers supported Williams' (1992) findings that women in feminized occupations were more likely to be discriminated against by male bosses than were males in these occupations.

Williams (1992) also found that males in feminized occupations often developed close

personal ties with their male supervisors, often being mentored by them and socializing with them outside the workplace. Only one participant in this study observed male teachers receiving special treatment from the principal. In Marlene's school, a select group of young males – which Marlene dubbed the golden boys' club, enjoyed a privileged position because of their friendship with their principal. However, in this situation the principal was a female who had developed close friendships with these men prior to assuming the principalship.

Williams (1992) found that men hired into female dominated occupations often encountered a glass escalator effect, structural advantages that enhanced their careers. It would be incorrect to consider the special treatment the golden boys' club received a result of the 'glass escalator' effect as defined by Williams, because older, male teachers were not given similar opportunities. Moreover, male teachers constituted a majority, or 62 percent, of the teaching staff, too large a percentage to be considered a token group. In this situation, if Kanter's (1977) definition of a token group were to be used, the percent of men on staff would have to be less than 15 percent of the workers in the organization. No other women in this study noted the presence of a privileged group of teachers of either gender. The members of the golden boys' club which Marlene described may have been accorded their special status simply because they were taking advantage of their friendship with the principal, a former teaching colleague.

Feminization of the Staff, the Principal and the School Climate. The stories presented by the participants in this study suggested that the school climate was affected by the principal's personality and administrative style. Codding and Tucker (2000) asserted that the school principal played an important role in establishing a school's climate. School climate encompassed the interaction between the personalities of the principal and teachers, and established the school's tone.

While all participants stated they enjoyed a positive relationship with their current administrators, not all were satisfied with the tone that had been established in the school. Nancy and Laurie, both of whom enjoyed teaching in their school, were satisfied with the tone established by the principal. Nancy asserted that while their principal was usually in the office working, he would find time in his schedule to visit the staff room or the department offices throughout the school to socialize with the staff. Karen's comments describing principal and teacher interaction, however, suggested the climate within her school was not completely positive. Since the first-year, female principal followed procedures literally and made no accommodations for extraneous circumstances, she was perceived by the staff as inexperienced and rigid; teachers felt she distrusted them. Karen did not enjoy walking into her office because the principal always assumed the worst and anticipated a confrontation. Carole, a colleague of Karen's, acknowledged that the principal administered rules literally, but perceived this as a positive trait because rules were also being administered equally. Carole chose to cooperate with the principal and ignore the behaviour exhibited by some male teachers who were "talking behind [the female principal's] back, giving her a hard time". Debbie, who was transferred to her current school because of a school closure, maintained a good working relationship with her male principal and vice-principal, but was dissatisfied with how student discipline issues were handled by the administrators in her new, larger school. Having transferred from a smaller school with a more familial atmosphere, Debbie found adjusting to a much larger school, where staff did not work as closely together, difficult. While Marlene maintained a positive relationship with her female principal, she was unhappy with the principal's leadership and with the principal's inequitable division of tasks among teachers. Marlene felt that certain people on her staff, usually the women, were asked by the female principal to do more than their male counterparts and that, consequently, the same people did much of the extra-curricular work.

Moreover, Marlene perceived that a group of younger male teachers, the golden boys' club, were shown favouritism by the female principal and allowed to contribute less. The existence of a privileged group did not promote a healthy school climate.

Schultz, Glass, and Kamholtz (1987) asserted that a healthy school climate existed when school personnel worked together to create an environment that was "productive, nurturing, positive, and supportive" (p. 432). In Marlene's school it appeared that a healthy school climate did not exist, as some staff members received privileged treatment that other staff members resented. The circumstances evident in this situation, however, suggested that the feminization of secondary teachers was not a factor in the establishment of the negative climate in this school. First, the teaching staff at Marlene's school was the least feminized in this study with more than half of the teachers being men. Second, the principal had been a teacher at this school and appeared to be having difficulty asserting her authority over teachers with whom she had been friends. Finally, it was possible that some teachers on staff were taking advantage of their friendship with the principal to cultivate a privileged position.

Earning the Respect of Parents. Earlier researchers have not discussed how women Science teachers were accepted by parents. This study found that the six women were recognized by parents as qualified and competent in the teaching of Science. Stories presented by the participants suggested they were held in high esteem by parents and that parents felt comfortable dealing with them. For example, parents whose children Carole no longer taught often stopped to visit with her during Parent-Teacher interviews if Carole had free time available in her interview schedule.

The participants in this study maintained that their contact with parents was positive. Only two participants were able to provide an example of a negative experience with a parent. Marlene's recent experience with an angry mother who unsuccessfully tried to gather

incriminating evidence against her from other parents was one example. A second example of a negative experience in dealing with a parent was shared by Laurie. She was slightly relieved to learn that the father had delivered the same message to all his son's teachers – the son had a problem with all his teachers, not just Laurie. On the whole, however, the participants noted that their interaction with parents had been positive.

Two participants were held in such high regard by parents that they were approached with concerns about the performance of other teachers within the Science department. Even before Karen became the Science department head, parents were coming to her with their concerns about other Science teachers, knowing that she would help resolve them. However, she believed parents selected her, not because of her credentials, but because she was "a good listener" with whom they felt comfortable airing concerns. Laurie also found herself the recipient of a few parental complaints about a couple of young, new female Science and Math teachers who had been assigned large grade 9 and 10 applied-level Science and Math classes, a teaching challenge for even experienced teachers.

Biklen (1983), who observed conflict between some female elementary school teachers and well-educated mothers in her study, asserted that teachers' professionalism was sometimes questioned because they worked in a traditionally female occupation that has occasionally been classified as a semi-profession. Karen's and Laurie's experiences as the liaisons for parental concerns about other Science teachers, suggested that, unlike teachers in Biklen's study, the professionalism of these women was not questioned. Neither did Carole find her professionalism questioned by parents. Parents acknowledged the amount of work she did to enable their children to succeed: Carole assisted students after school in her classroom and also gave out her phone number and e-mail address so students could contact her at home for assistance.

Cammack and Phillips' (2002) found that women elementary teachers believed parents preferred male teachers because males were perceived to have better discipline. The female secondary school teachers interviewed for this study, however, did not have this experience. Laurie noted that some parents questioned the control a young female teacher had over her grade 10 applied-level Math class, but whether a male teacher in this situation would have received the same parental treatment is open to speculation.

Over the course of their teaching careers, three participants in this study observed an increased incidence of parents blaming teachers in general for any school-related problems their children had. Laurie, for example, provided the example of the mother who blamed the Math teacher for her son's math difficulties, rather than acknowledging her son had difficulties with the subject. Marlene's experience with the mother of the student who threw a book at her was another example. Debbie associated the increased tendency for parents to blame teachers for their children's failures with an overall decrease in parental support for teachers. Karen and Carole, who taught primarily academic and university level students in an affluent urban neighbourhood, did not find parents blamed teachers for their children's difficulties.

Interaction with Students. The findings of this study suggested that students do accept women as qualified secondary school Science teachers. All women in this study were accepted by students as qualified Science teachers. Karen's students thought so highly of her abilities and credentials that they frequently told her she was under-employed working as a teacher, motivating Karen to discuss the "nobility of being a teacher" with them. Laurie's students respected her experiences and education, and willingly asked questions that took advantage of her knowledge.

Four women in this study did observe a loss of respect among students for teachers. Laurie stated that one of her young colleagues, who had been a student in the school ten years

earlier, had even observed a marked change in student loss of respect toward teachers. Participants noted that the loss of respect exhibited by students was most evident among students enrolled in applied- and college-level courses. Nancy also noted that at her school the young female teachers were the most likely to encounter disrespect from male students. The lack of respect amongst students for teachers was less evident at the academic level. Karen and Carole, the two participants who did not comment on the erosion of student respect, both taught academic-level students. Researchers, Kaufman, Westland, and Engvail (1997), asserted that by the 1980s the teaching environment in general had declined: Some students are more vocal and have less respect for teachers and other authority figures, drug and weapons incidents in schools have increased, and assaults against teachers and students have become more common. Exactly what the correlation, if any, between the loss of student respect for teachers and the increasing number of female teachers in secondary schools was, however, is open to conjecture and is a topic for future research.

Relationship with Support Staff. Schultz, Glass and Kamholtz (1987) maintained that the building and maintaining of positive interpersonal relationships was an important factor in the creation of a school climate that was psychologically healthy. The evidence suggested that the relationships the women in this study cultivated with their school support staff helped contribute to a healthy school climate. Carole, for example, preferred to spend the little spare time she had socializing with the cafeteria staff, rather than with her colleagues, because the cafeteria staff did not talk negatively about students. Karen, however, was the most assertive of the women in this study in establishing a positive relationship with the support staff. She maintained that the secretaries were underappreciated and underpaid, and not treated well.

Karen's action and concern toward the support staff appeared open and non-repressive, and involved dignity and caring; attributes that Schultz, Glass and Kamholtz (1987) considered

important in the building and maintaining of positive interpersonal relationships within a school. Data provided by Karen, however, suggested that not all teachers interacted positively with support staffs. Some of Karen's colleagues did not bother to talk to the custodial staff.

Conclusions

What were the experiences of women teaching in secondary school Science, a subject area traditionally dominated by men? In the educational setting, how were these women treated by others? To answer these questions, six women Science teachers from two northern Ontario school boards were interviewed about their experiences teaching in Science and about their experiences within the educational setting.

In response to the first focus question, evidence provided by these women suggested that feminization has occurred both within Science departments and within the larger school setting. However, since men still comprised a large percentage of secondary school teachers within their schools and were still choosing to enter the occupation, it appeared that Bradley's (1993) second stage of feminization, the invasion stage, had been reached in the schools involved in this study. Although teaching in a field considered to be the domain of men, the participants were accepted as qualified Science teachers by administrators, peers and parents. Recent government legislation that introduced a new curriculum and increased instructional time, was perceived by the women as having negative consequences, providing support to the assertion of researchers that the feminization of an occupation is often accompanied with social, economic and political consequences.

Trends observed by the women, included declining student populations within their schools and increasing numbers of girls pursuing and excelling in Science courses and programs at the secondary and post-secondary levels. While the participants believed they had motivated students to continue in Science programs, they were uncertain if their presence in the classroom

specifically motivated girls. The mere presence of women Science teachers along with their varied instructional styles, however, may influence girls simply through the hidden curriculum.

While some of the women had assumed in-school leadership positions, they were uninterested in administrative positions that were divorced from teaching, since teaching was perceived as the more desirable position. Teaching, however, was difficult to balance with family life as they devoted many hours outside of their regular teaching hours to interacting and working with students. Teaching infringed upon their family time while family obligations caused them to place limitations on their careers. Maternity leaves sometimes presented difficulties and often resulted in placing careers on hold, despite their viewing teaching as a 'calling.'

In the educational setting, how were these women treated by others? The participants' stories suggested that, during a period in which secondary school teaching staffs have become increasingly feminized, they were accepted as Science teachers by administrators, colleagues, students, school support staff, and students' parents, although exceptions did occur with each group. Early in her career, one participant was urged by her principal to apply for the assistant department head position, and another was often asked by her principal to sit on projects and programs with him. The relationship between these women and administrators was not always rosy, however, as three women had experienced incidents of gender-based discrimination. In terms of parental acceptance, the results suggested that, despite two isolated incidents, the women in the study were accepted as competent Science teachers by parents. Parents felt comfortable enough with three of the women to share their concerns about other teachers, hoping that the women could help resolve their problems. It was the experience of one woman that parental confidence in a teacher evolved over time and was totally unrelated to a teacher's gender. Students accepted each woman in this study as a qualified Science teacher; one

participant was even perceived by students as being over-qualified for a teacher. Only one participant had her knowledge base questioned by a pair of students, an incident that happened only once in her twenty-year career.

Each of the participants expressed dissatisfaction in one or more areas of their working environment, suggesting that their school climate could be improved. Each woman had established a positive and professional relationship with her current principal, despite being unhappy with how the principal's administrative style had affected the school climate.

Recommendations

To date, most of the research on the feminization of teaching has focused on the issue at the elementary school level where the phenomenon had been very noticeable for decades. Little research existed on feminization at the secondary school level. The results of this study were based on the experiences of a small sample of northern Ontario Science teachers. It would be worthwhile to repeat this study with sample groups from other provinces, school boards and disciplines. Is feminization occurring in secondary schools elsewhere in Ontario, Canada, and the industrialized world? How extensive is feminization among the teaching staffs at the university and college level? Are there certain subject areas that are exempt from the phenomenon? In those jurisdictions and disciplines in which feminization is occurring, how do teachers' experiences compare with the experiences of the participants in this study? It would also be worthwhile to repeat the study with samples of male secondary school teachers. How have they perceived feminization? What have their experiences been?

The feminization of the occupation of secondary school teacher should be examined at the teacher college level. There are a number of issues which should be studied. For example: What proportion of females are entering teacher education programs? Are there certain subject areas with a dearth of male teacher candidates? What are these students' perceptions of the

occupation of teacher? There is a need for researchers to investigate the proportion of men entering the occupation of secondary school teacher to determine if there is cause for alarm. If men are choosing to not enter teaching, then what action should be taken to rectify the situation so individuals of both genders continue to find the job appealing? It is important that secondary school teaching not be perceived as women's work to prevent the negative consequences associated with feminized occupations from occurring and because children need role models of both genders in the school system.

The participants in this study have seen an increase in the number of female students opting to pursue Science at the post-secondary level. Further research is needed to determine if this is true and, if so, why? A study examining the reasons why females are entering post-secondary Science programs would help determine if having a female Science teacher in high school has an impact. Other factors associated with a school's hidden curriculum could also be studied.

Laurie observed a difference in the way newly hired male and female teachers were treated by administrators, especially in the area of classroom management. How widespread is this behaviour? What factors determine if a new teacher is going to be subjected to more intense scrutiny by the administration? Do male and female administrators treat young, new male and female teachers differently? Do second-career teachers who have chosen to enter teaching later in life encounter the same scrutiny as new, young teachers?

Additional research is also required to determine how prevalent the perception that male Science teachers' courses are more difficult, is. If the perception does exist in other settings, is it the gender of the teacher, the teacher's teaching style, the subject matter, or some other factor that is being judged by students? Moreover, are there instances in which the reverse is true, where courses taught by females are considered more difficult?

What impact will the feminization of the occupation of secondary school teacher have on a school's climate? Will, as Williams (1992) noted in her study of feminized occupations, men enjoy structural advantages and 'glass escalators'? Will, as Gilbertson (1981) found, men continue to enjoy privileged interaction with school principals over important issues such as school policy?

REFERENCES

Acker, S. (1994). *Gendered education: Sociological reflections on women, teaching and feminism.* Toronto, ON: OISE Press.

Acker, S. (1999). *The realities of teachers' work: Never a dull moment.* New York: Cassell and Continuum.

Acker, S., & Oatley, K. (1993). Gender issues in education for science and technology: Current situation and prospects for change. *Canadian Journal of Education, 18*(3), 256-273. Retrieved July 11, 2005, from http://proquest.umi.com.

Apple, M.W., & Jungck, S. (1990). "You don't have to be a teacher to teach this unit:" Teaching, technology, and gender in the classroom. *American Educational Research Journal, 27*(2), 227-251.

Baron, J.N., & Bielby, W.T. (1985). Organizational barriers to gender equality: Sex segregation of jobs and opportunities. In A.S. Rossi (Ed.), *Gender and the life course* (pp. 233-251), New York: Aldine.

Bernard, J.L., Hill, D., Falter, P., & Wilson, W.D. (2004). *Narrowing the gender gap: Attracting men to teaching.* Toronto, ON: Ontario College of Teachers.

Biklen, S.K. (1983). *Teaching as an occupation for women: A case study of an elementary school.* Syracuse, NY: Education Designs Group.

Biklen, S.K. (1995). *School work: Gender and the cultural construction of teaching.* New York: Teachers College Press.

Brabeck, M.M., & Weisgerber, K. (1989). College students' perceptions of men and women choosing teaching and management: The effects of gender and sex role egalitarianism. *Sex Roles, 21*(11/12), 841-857.

Bradley, H. (1993). Across the great divide: The entry of men into "women's jobs." In C.L. Williams (Ed.), *Doing "women's work": Men in nontraditional occupations* (pp. 10-27). Newbury Park, CA: Sage Publications.

Bradley, J.G. (2000). Male elementary teacher candidates: A narrative perspective on their initial career choice. *McGill Journal of Education, 35*(2), 155-172.

British Columbia Teachers' Federation (1994). Women in Education. In *Tools for gender equality: Statistical notes.* Retrieved April 15, 2003, from http://www.bctf.ca/Publications/ Research Reports/94sw01/StatisticalNotes.html

Cammack, J.C., & Phillips, D.K. (2002). Discourses and subjectivities of the gendered teacher. *Gender and Education, 14*(2), 123-133.

Carlson, H.C. (2004). Changing of the guard: A new generation of teacher leaders will raise quality-of-life priorities. *The School Administrator, Web Edition.* Retrieved August 8, 2004, from http://www.aasa.org/publications/sa .

Carrington, B. (2002). A quintessentially feminine domain? Student teachers' constructions of primary teaching as a career. *Educational Studies, 28*(3), 287-303.

Chapman, A. (2000). The difference it has made: The impact of the women's movement on education. *Independent School, 60*(1), 20-30.

Codding, J.B., & Tucker, M.S. (2000). A new high school design focused on student performance, part II. In *NASSP Bulletin, 84* (616), 49-60.

Coladarci, T. (1992). Teachers' sense of efficacy and commitment to teaching. *Journal of Experimental Education, 60*(4), 323-337.

Coulter, R.P., & McNay, M. (1993). Exploring men's experiences as elementary school teachers. *Canadian Journal of Teacher Education, 18*(4), 398-413.

Coventry, B.T. (1999). Do men leave feminizing occupations? *The Social Science Journal*, 36(1). Retrieved April 5, 2003 from InfoTrac Web (Electronic Collection: A54370546).

Creswell, J.W. (1998). *Qualitative inquiry and research design: Choosing among the five traditions.* Thousand Oaks, CA: Sage.

DeCorse, C.J.B., & Vogtle, S.P. (1997). In a complex voice: The contradictions of male elementary teachers' career choice and professional identity. *Journal of Teacher Education, 48*(1), 37-46.

Epstein, C.F. (1988). *Deceptive distinctions: Sex, gender and the social order.* New Haven, CT: Yale University Press.

Essen, M. van (1999). Strategies of women teachers 1860-1920: Feminization of Dutch elementary and secondary schools from a comparative perspective. *History of Education, 28*(4), 413-433.

Fox, M.F. (2001). Women, science, and academia: Graduate education and careers. *Gender and Society, 15*(5), 654-666.

Giguere, D. (1999). Gender gap widening among Ontario Teachers. *Professionally Speaking*, June 1999, 42-45.

Gilberston, M. (1981). The influence of gender on the verbal interactions among principals and staff members: An exploratory study. In P.A. Schmuck, W.W. Charters, Jr., & R.O. Carlson (Eds.), *Educational policy and management: Sex differentials (pp. 297-306).* New York: Academic Press.

Glazer, J.S. (1991). Feminism and professionalism in teaching and educational administration. *Educational Administration Quarterly, 27*(3), 321-342.

Griffin, G. (1997). Teaching as a gendered experience. *Journal of Teacher Education, 48*(1), 7-18.

Grumet, M.R. (1988). *Bitter milk: Women and teaching.* Amherst: The University of Massachusetts Press.

Gutmann, A. (1987). *Democratic education.* Princeton, NJ: Princeton University Press.

Hansen, D. (1995). *The call to teach.* New York: Teachers College Press.

Haralambos, M, & Holborn, M. (1991). *Sociology themes and perspectives* (3rd ed.). London: Harper Collins.

Hatch, J.A. (2002). *Doing qualitative research in education settings.* Albany, NY: State University of New York Press.

Hodson, R, & Sullivan, T. (1990). *The social organization of work.* Belmont, CA: Wadsworth Publishing Co.

Jamieson, B. (2005). Where have all the male teachers gone? *Education Today, 17*(1), 12-15.

Jefferson, A.L. (1998). *State of the state – Ontario.* (ERIC Document Reproduction Service No ED029421)

Kahle, J.B. (1989). *Images of Scientists: Gender Issues in Science Classrooms. What the Research Says to the Science and Mathematics Teacher, Number 4.* Perth, Australia: National Key Centre for Science and Mathematics. (ERIC Document Reproduction Service No ED370785)

Kanter, R.M. (1977). *Men and women of the corporation.* New York: Basic Books.

Kaufman, R., Westland, C., & Engvall, R. (1997). The dichotomy between the concept of professionalism and the reality of sexism in teaching. *Journal of Teacher Education, 48*(1), 118-128.

Lahelma, E. (2000). Lack of male teachers: A problem for students or teachers? *Pedagogy, Culture, and Society, 8*(2), 173-186.

Lee, V.E., Loeb, S., & Marks, H.M. (1995). Gender differences in secondary school teachers' control over classroom and school policy. *American Journal of Education, 103* (5), 259-301.

Leslie, K. (2004, April 28). Education minister worried male-teacher shortage hurting boys' performance. *Canadian Press NewsWire*. Retrieved May 14, 2005, from http://proquest.umi. com.ezproxy.lakeheadu.ca/pqdlink?

Letts, W.J. (1997). *Gender (in)forms self images: The case of five male secondary science teachers.* Chicago, IL: Annual Meeting of the American Educational Research Association. (ERIC Document Reproduction Service No ED412193)

Macdonald, M. (1995). Economic restructuring and gender in Canada: Feminist Policy and Initiatives. *World Development, 23*(11), 2005-2017.

MacLeod, L. (1988). *Women and education: Progress as paradox - a profile of women teachers.* Toronto, ON: Canadian Teachers Federation.

Mahony, P. (2000). Teacher education and feminism. *Women's Studies International Forum, 23*(6), 767-775.

Marshall, C. (1999). Researching the margins: Feminist critical policy analysis. *Educational Policy, 13*(1), 59-76.

McNay, M. (2001). Insights from the life history of a second career male grade one teacher. *McGill Journal of Education, 36*(2), 131-148.

Montecinos, C. & Nielsen, L.E. (1997). Gender and cohort differences in university students' decisions to become elementary teacher education majors. *Journal of Teacher Education, 48*(1), 47-54.

Ontario Ministry of Education (1974). Table 5.40: Age of full-time teachers in publicly supported elementary and secondary schools in Ontario, 1973-74. *Education statistics, Ontario, 1974.* Toronto, ON: Queen's Printer for Ontario.

Ontario Ministry of Education (1993). *1992-1993, Key Statistics: Elementary and secondary education in Ontario.* Toronto, ON: Queen's Printer for Ontario.

Ontario Ministry of Education (n.d.). Full-time teachers in schools, 1999-2000. In *Quick facts: Ontario schools, 1999-2000.* Retrieved April 15, 2003, from http://www.edu.gov.on.ca/ eng/general/elmesec/quickfacts/2000-01/index.html

Prentice, A. (1990). Multiple realities: The history of women teachers in Canada. In F. Froman, M. O'Brien, J. Haddad, D. Hallman, & P. Masters (Eds.), *Feminism and education: A Canadian perspective* (pp. 125-144). Toronto, ON: Ontario Institute for Studies in Education.

Rafferty, T.J. (2003). School climate and teacher attitudes toward upward communications in secondary schools. In *American Secondary Education, 31*(2), 49-70.

Sadker, M., & Sadker, D. (1994). *Failing at fairness: How America's schools cheat girls.* Toronto: Maxwell Macmillan Canada.

Schmuck, P.A. (1981). The sex dimension of school organization: Overview and synthesis. In P.A. Schmuck, W.W. Charters, Jr., & R.O. Carlson (Eds.), *Educational policy and*

management: Sex differentials (pp. 221 - 234). New York: Academic Press.

Schreiber, C.T. (1979). *Changing places: Men and women in transitional occupations.* Cambridge, MA: MIT Press.

Schultz, E.W., Glass, R.M., & Kamholtz, J.D. (1987). School climate: Psychological health and well-being in school. *Journal of School Health, 57* (10), 432-36.

Vaughn-Roberson, C. (1992). Having a purpose in life: Western women teachers in the twentieth century. In R. Altenbugh (Ed.), *The teacher's voice: A social history of teaching in twentieth-century America* (pp. 13-25). Bristol, PA: Falmer.

Williams, C.L. (1992). The glass escalator: Hidden advantages for men in the "female" professions. *Social Problems, 39*(3), 253-267.

Williams, S.R. (2002). *Gender and the teaching profession in Wales, 1900-50.* Paper presented at the Annual Conference of the British Educational Research Association, University of Exeter, England, 12-14 September 2002. Retrieved March 24, 2003 from Education-line database.

Wright, R. & Jacobs, J.A. (1994). Male flight from computer work: A new look at occupational resegregation and ghettoization. *American Sociological Review, 59*(4), 511-536.

APPENDICES

Lakehead
UNIVERSITY

Faculty of Education

Appendix A: Letter to Superintendent Requesting Permission to Recruit Study Participants from School Board

Researcher's Address
Date

Dear _____,

I am writing to request permission to conduct a study with teachers in your school board. This study is titled "Women Science Teachers' Experiences During a Time of Transition" and would involve interviewing five female Science teachers. This research will be used to write my thesis, a requirement for my Master of Education degree at Lakehead University. My thesis supervisor is Dr. Hope-Arlene Fennell. She can be reached at [phone number] or at her e-mail address, _____.

I am conducting research on the experience of being a woman secondary school Science teacher during a period when fewer men have entered the teaching profession. Most of the research on the feminization of the teaching profession has investigated the impact at the elementary school level, and has focused primarily on male elementary school teachers. I wish to study the impact at the secondary school level in a subject area, such as science, which has traditionally been taught by men. I am interested in learning what these teachers' experiences have been.

My study would involve interviewing a total of five female teachers at different secondary schools within the Algoma District School board. I would like to contact principals at larger secondary schools in the board for names of potential participants – female Science teachers with at least ten years teaching experience who might be interested in volunteering for this study. Interview questions will focus on perceived employment trends, promotional opportunities, impact of gender on career, future career aspirations, interactions with others within the educational setting, and teaching and discipline strategies. I must stress that participation is voluntary and any of the teachers can withdraw from the study at any time, without repercussions. Because I am also a full-time teacher, interviews would be conducted by telephone and would occur after school hours. Each teacher would be asked to participate in three interviews of approximately one hour each.

To guarantee that the names of the participants and of the school board remains anonymous, pseudonyms will be used. There are no known risks involved in participating in this study; potential benefits include self-enlightenment for the teachers who become involved. To reduce any stress which might be induced by the study, I propose to conduct it after teachers have started the school year and have established routines and prior to report card preparation and parent interviews.

Thank you for considering this request.

Sincerely,

Judith Topham

1965 • 2005 CELEBRATING 40 YEARS

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Appendix B: Letter to Principals in Requesting Assistance in the Recruitment of Participants

Researcher's Address
[Date]

Dear _____,

I am writing to request permission to conduct research in your school. I have received permission from [board official's name] to contact you. The title of the study is "Women Science Teachers' Experiences During a Time of Transition". The research will be used to write my thesis, a requirement for my Master of Education degree. My thesis supervisor at Lakehead University is Dr. Hope-Arlene Fennell. She can be reached at [phone number] or at [e-mail address] , if you have any concerns about the study.

I am conducting research on the experience of being a woman secondary school Science teacher during a period which has witnessed increased feminization of secondary school teachers. Most of the research on the feminization of the teaching profession has investigated the impact at the elementary school level, and has focused primarily on male elementary school teachers. I want to study the impact at the secondary school level in a subject area, such as science, which has traditionally been taught by men.

My study will involve interviewing five female Science teachers with ten or more years teaching experience. Interview questions would focus on perceived employment trends, promotional opportunities, impact of gender on career, future career aspirations, interactions with others within the educational setting, and teaching and discipline strategies.

Participation is voluntary and any teacher can withdraw from the study at any time, without repercussions. Participation would involve being interviewed three times. Because I am also a full-time teacher, interviews would be conducted by telephone and would occur after school hours. Each interview will be approximately one hour in length.

To guarantee that the names of the school board, high schools and teachers involved remain anonymous and responses confidential, pseudonyms will be used. There are no known risks associated with this study; potential benefits include self-enlightenment for the teachers who are involved. To reduce any stress which might be induced by the study, I propose to conduct it after teachers have started the school year and have established routines and prior to report card preparation and parent interviews.

Once you have granted me written permission to conduct the study, I will contact you for the names of potential teachers who meet the above criteria.

If you have any questions or concerns, you can contact me by telephone at [phone number] (work) or [phone number] (home), or by e-mail at [e-mail address], or my thesis supervisor, Dr. Fennell.

Thank you for your consideration in this matter.

1965 2005 CELEBRATING 40 YEARS

Sincerely,

Judith Topham

955 Oliver Road Thunder Bay Ontario Canada P7B 5E1 www.lakeheadu.ca

Appendix C:
Checklist from Principals Regarding Permission to Conduct Study

Dear Ms. Topham:

I have read your letter requesting permission to contact teachers in my school for your study, "Women Science Teachers' Experiences During a Time of Transition." I understand you are looking for female Science teachers who have at least ten years' teaching experience in Science.

Based on the information you have provided: (Check one of the following.)

____ You have my permission to contact teachers in my school who meet your criteria. There is at least one teacher who meets the criteria for your study in this school. This teacher will be sent a package which outlines the purpose of the research, the voluntary nature of participation, the time commitment required, the procedures for ensuring confidentiality, the known risks and benefits of participating in the study, and the process of dissemination of the research to the participant.

I also understand that you will contact me within the next couple of days for the name(s) of potential study participants.

____ There are no teachers on staff that meet your criteria.

____ Permission is NOT given to conduct your study.

_____ _____

(Principal's Signature) (Date)

_____

(School)

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Appendix D: Cover Letter to Potential Participants

Researcher's Address
[Date]

Dear _____:

I am writing to request your participation in a study which will investigate the experiences of five women Science teachers during a period which has witnessed an increase in the feminization of secondary school teaching staffs. The title of the study is: Women Science Teachers' Experiences During a Time of Transition. I am seeking volunteers who have at least ten years' teaching experience and are female secondary school Science teachers to participate in this study. You were identified as a potential participant by your principal.

The intent of this research is twofold. First, it is being conducted to fulfill requirements for the degree of Master of Education from Lakehead University. My thesis supervisor for this research is Dr. Hope-Arlene Fennell of Lakehead University. She can be contacted at [phone number] or at [e-mail address]. Second, the research will provide insight into the experiences of female Science teachers during a period which has seen a decline in the number of men pursing secondary school teaching careers. Interview questions will focus on how being a woman has impacted on your career and differences in the way others interact with male and female teachers. Through your participation in this study you will help to answer these questions.

The information will be gathered in a series of three telephone interviews, each approximately 60 minutes in length. If necessary, a short follow-up phone call will be made to clarify content from the final interview. You will be provided with a list of interview questions prior to the actual interview. All answers are acceptable; there are no wrong answers. You may also decline from answering some questions, for whatever reason. Interview questions would focus on perceived employment trends, promotional opportunities, impact of gender on career, future career aspirations, interactions with others within the educational setting, and teaching and discipline strategies. Interviews will be recorded, transcribed, and coded. You will be sent a copy of each transcript and will have the opportunity to clarify your responses.

All information you provide will remain confidential. At the conclusion of the study all audio-tapes and transcripts will be securely stored at Lakehead University for seven years. However, the findings of this research will be made available to you at your request upon the completion of the project. A copy of the thesis will also be available in the Lakehead University Library.

If you are interested in participating in this research or have any questions about my proposed study, please contact me at [phone number] or by e-mail at [e-mail address]. I look forward to your participation in this research endeavour.

Sincerely,

1965 • 2005
CELEBRATING 40 YEARS

Judith Topham

955 Oliver Road Thunder Bay Ontario Canada P7B 5E1 www.lakeheadu.ca

Appendix E: Informed Consent Form to be Mailed to Prospective Participants

Informed Consent Form

Thank you for agreeing to participate in this study, *Women Science Teachers' Experiences During a Time of Transition.* This form outlines the purposes of the study and provides a description of your involvement and rights as a participant.

The purposes of this study are:

1. To fulfill requirements for the degree of Master of Education from Lakehead University.
2. To gain insight into the experiences of female Science teachers during a period which has seen a decline in the number of men pursing secondary school teaching careers.

Telephone interviews will be used to compile data for this study. There will be ***three telephone interviews***, each approximately ***60 minutes*** in length. Each interview will be audio taped, transcribed, and coded. You will be mailed a copy of your interview transcripts so that you may review them for accuracy or to clarify or add information. The audio tapes will be used solely for this study. The tapes and the written transcripts of their contents will be retained by my thesis supervisor at Lakehead University for a period of seven years upon the completion of the study before being destroyed.

Your real name will not be used at any point of information collection, or in the written study. To ensure your anonymity, you (and any other person you refer to) will be given a pseudonym that will be used in all your transcripts and in the completed study. The name of your school and school board will also be given pseudonyms.

There are no known risks and/or discomforts associated with this study. You will, however, be giving up some of your own time to participate. Benefits may include increased self-knowledge and the satisfaction of contributing to society through research.

Your participation in this research is voluntary. You may decline to answer certain questions, if you wish. You have the right to withdraw at any point in the study, for any reason, even after signing this form.

Upon the completion of the study, the results of the research will be made available to you, if you so request. You may access a copy of the completed thesis in the Lakehead University Library.

You are encouraged to ask any questions at any time about the nature of the study and the methods I am using. I can be contacted at [phone number] (collect) after 5:00 p.m. at home, or at [e-mail address]. My thesis supervisor is Dr. Hope-Arlene Fennell. She can be reached at [phone number] or at [e-mail address].

Your signature below indicates that you consent to participate freely, without coercion, having completely read this document.

_____ _____

Participant's name (printed) Signature of Participant

_____

Date

Return one signed copy to the researcher in the enclosed envelope and keep the other copy for your records.

Appendix F: Interview Protocol for First Interview

Interviewee:
Date:
Time:
Location:
Tape Number:

INTERVIEW TOPIC: How has being a female teacher impacted on your career?

1. Introduce myself.

2. Discuss informed consent issues:
   __ permission to tape interview
   __ treatment of tape and typed transcript
   __ confidentiality (use of pseudonym)
   __ purposed length of interview: 60 minutes

3. Review the purpose of the study

4. **Questions:** (Actual protocol will be several pages in length with spaces between each question for point form notes. The interview will be terminated after one hour. **Any questions not asked at this interview will be asked in the next interview.)**

   (A) *Gather background information on participant:*
   - Number of years teaching experience:
   - Number of years experience teaching Science:
   - How long have you worked at your present school?
   - How long have you been a Science teacher at this school?
   - Number and sex of administrators:
     - Principal:
     - Vice-principals:
   - Number of teachers on staff: _____ female, _____ male
   - Number of teachers in Science department: _____ female, _____ male

   (B) Since you were hired, have you noticed a change in the ratio of female to male teachers on your staff? If yes: Is this a trend which has affected all subject areas [or departments] in your school or has it been confined to just a couple? Which ones?

   (C) With respect to new teachers being hired, have you noticed any trends? For example, has there been a larger percentage of males or females hired? Are the teachers being hired second career teachers?

(D) Do you still teach with any male or female colleagues with whom you began your career?

(E) Have any of the colleagues with whom you began your career received promotions? If yes, who was this, and to what position was this person promoted?

(F) Did you encounter hiring advantages because you were a female Science teacher? If yes, explain.

(G) Describe any opportunities for advancement you have had. Have your male colleagues had similar opportunities? How did they fare?

(H) Where do you see your career taking you in five years? In ten years? In fifteen years?

(I) Has being a woman hindered your career? Explain. [Possible probes: maternity leaves, class assignments, sexual harassment, sabotage, poisoned work environment, questioned about competence, etc.]

(J) Describe any instances where you have received preferential treatment because of your sex.

(K) Describe any instances where being a male might have resulted in preferential treatment.

(L) Have administrators ever offered you explicit words of encouragement about being a Science teacher because you were a woman? If so, describe the experience.

(M) If your department was hiring a new teacher, and the selection had been narrowed to a male and a female, each with identical credentials, who should be hired and why?

5. Do you have any questions, comments, or concerns about this interview or the questions asked? Is there anything else that you would like to discuss?

6. A typed copy of the transcript will be mailed to you; please check it for accuracy. You may contact me at xxx-xxx-xxxx or (email address).

7. Would you prefer the transcript to be __ mailed or ___ e-mailed.
Participant's address:

8. Thank you for participating in this interview.

Appendix G: Interview Questions for Second and Third Interviews

These questions will be typed in the format shown in Appendix E. To save space, only the interview questions, rather than the entire protocol, have been included here. Prior to beginning this interview, the participant will be asked if she wishes to make any changes to the responses made in the previous interview.

Interview 2

INTERVIEW TOPIC: Experiences as a female science teacher.

1. Tell me about your experiences as a female Science teacher.

Probing questions:

1. How do your students interact with you? [Possible probes: attitude, behaviour, language, respect, acceptance, discipline, perceived competence]

2. How do your colleagues interact with you? This could be as a fellow teacher, Science teacher, in the halls, in the staff room, at lunch time, doing extra-curricular activities, socializing after school, etc.

3. Describe the relationship you have with your principal. [Probes - as a teacher, in the halls, in the staff room, at lunch time, doing extra-curricular activities, socializing, after school, etc.]

4. Describe the relationship the principal has with your male colleagues.

5. Describe the relationship you have with your vice-principal(s). [Probes - as a teacher, in the halls, in the staff room, at lunch time, doing extra-curricular activities, socializing, after school, etc.]

6. Describe the relationship your vice-principal(s) has with your male colleagues?

7. Do you have contact with school board administrators (director of education, superintendents, resource personnel)? If yes, describe this contact.

8. How do students interact with your male colleagues? [Possible probes: attitude, behaviour, language, respect, acceptance, discipline, perceived competence.]

9. Describe your teaching style.

10. How does your teaching style compare with that of (a) other female science teachers, (b) male science teachers, (c) your male colleagues in other subjects, (d) female colleagues in other subjects?

11. What do you perceive to be the impact of your being a female science teacher on your (a) students, (b) female students, (c) male students. Describe any difference which you perceive to have on your students as a result of their gender?

Interview 3:

INTERVIEW TOPIC: Experiences as a female science teacher.

1. Describe your interaction with the secretarial staff at your school.

2. (A) Describe how parents interact with you. [Possible probes: attitude, behaviour, language, respect, acceptance, perceived competence]
   (B) Describe any changes in this interaction over time.

3. Compare how parents interact with you and with your male colleagues.

4. Since you began teaching, what differences have you observed in the way parents have interacted with you and with your male colleagues? Has there been any difference over time?

5. Since you began teaching, what differences have you observed in the way the general public / administration / etc. have interacted with you and with your male colleagues?

6. Which colleagues on staff do you have the closest relationship with? What does this relationship involve?

7. If all the men in the Science department were going out for lunch, who would be invited?

8. If all the women in the Science department were going out for lunch, who would be invited?

9. How do you perceive yourself as a model for your students?

10. If necessary, additional questions dealing with related issues that emerge after the completion of the second interview with all participants will be included here.

Appendix H: Transcript Prior to Reformatting

The following transcript excerpt is from Marlene's first interview. This is the format that all transcripts were originally typed in and is what each participant received.

WOMEN SCIENCE TEACHERS' EXPERIENCES DURING A TIME OF TRANSITION

Interview 1

Interviewee: Marlene Date: Monday, March 29, 2004
Time: 8:00 - 9:00 p.m.
Location: Telephone Interview
Tape Number: #1
.....

53. Marlene: Male, and he became the Science-Math Head.

54. Judy: Just out of curiosity, did you apply or was that a long time ago.

55. Marlene: No, it was a long time ago. I didn't apply. I actually feel like a teacher, not as an administrator. So, I didn't apply for that position because of that. I mean, I feel, I have strong views on that. Sometimes we put teachers into positions ... the only way people they can advance is to become these administrations when really they are excellent teachers and we should keep them in the classroom. But ... that's how it is.

56. Judy: I've encountered that too. Did you encounter hiring advantages because you were a female Science teacher?

57. Marlene: I don't think so.

58. Judy: Describe any opportunities for advancement you have had.

59. Marlene: Can you clarify advancement?

60. Judy: Math-Science Head? ....

61. Marlene: We all had the opportunity to apply; it was open to everybody in our department. So, I've had that opportunity. But now we only have opportunities to ... that's becoming less and less. But we have opportunities to, you know, to participate on committees and exemplar projects, and I don't know whether that's considered advancement or craziness - taking on extra work.

62. Judy: When you said, "as I would know", can you clarify what you meant?

63. Marlene: Advancement also means being asked to - whether it's monetary or position wise. Sometimes I've been asked to sit on a committee in our board or district on exemplar projects or new curriculum, or things like that. I consider that advancement - And participating in those types of things. I don't know, sometimes you think that you are foolish for doing them because you are already busy enough. But that is a way to consider advancement – to be involved totally in the grassroots movement.

64. Judy: And to increase your profile. You wouldn't happen to know if whenever any of these opportunities arise if anybody in administration seems to encourage any person or any group more than another.

65. Marlene. I would think that they always encourage certain persons to do them so that they can hold onto their job. We have a sort a Golden Boy network at our school.

66. Judy: Can you explain what you mean by that?

67. Marlene: There are certain people on our staff who can do no wrong. They always get chosen to do things like 'best practices in teaching', although they've only been teaching two or three years. Everybody supports them a lot, they get a lot of recognition for the things that they do, but there are a lot of older teachers on staff that have been doing an excellent job for years and we seem to forget them. I just encountered that at this school. I taught at another school and that wasn't a problem. I've thought this was a community thing.

68. Judy: Do these people who are favoured have any special qualities or characteristics?

69. Marlene: They are usually Phys. Ed. teachers and they are male.

70. Judy: That is similar [to my situation]. Where do you see your career taking you in five years?

71. Marlene: In five years, I still think I'll be enjoying teaching all the courses that I teach. I think I'll be not coaching as much. I think I'll be doing an Envirothon group more and that type of thing. I do a lot of associate teaching. I was an associate teacher this year.

72. Judy: Associate teacher is with student teachers?

73. Marlene: Yes.

74. Judy: What classes do you teach?

75. Marlene: I taught everything this year. I teach biology and chemistry and grade 9 and 10 science.

76. Judy: How much coaching do you do? Just out of curiosity.

77. Marlene: I've been coaching since November; I'll be finished in April. It's about ten hours a week.

78. Judy: Is this just for one team or do you do a number of different teams?

79. Marlene: I do two different teams. And I sit on a school committee -- I'm the chair of a school committee called Strategies for Success. That meets once a week and we run an after school homework program and do remediation support for teachers for grade 9 and 10 students. I run the Awards Program for graduation, which is busy. That will start at the beginning of May and will be about 100 hours between May and graduation, which is in June. I mentor 25 students, so I'm a busy lady.

80. Judy: Your mentoring program – is that a school-wide thing?

81. Marlene: Yes.

82. Judy: Does every teacher [participate]?

83. Marlene: Not every teacher, only the teachers - well, we sort of get asked to do it. You say okay, you don't want to turn down the kids that need you. But not all the teachers [participate], but the Golden Boys Club - they don't do that.

84. Judy: It's sort of volunteer?

85. Marlene: Yes, it's sort of volunteer, but expected somewhat. It's a hidden thing.

Appendix I: List of Codes

above and beyond

age equals experience

altruism of others

career aspirations

change (department heads)

change (technology)

coaching

competence

department size

discrimination

diverse teaching styles

encouragement

enthusiasm

equal opportunities

equality

extra curricular

family importance

gender impact

gender neutral

hostile environment

I'm beat, now what?

I'm so apolitical!

Insularity

leadership

life long learner

male retirements

mentoring

misunderstood

mobility

motherliness

openness

participant's attitude toward gender

preferential treatment

ratio female to male staff

reaction of others to participant

respect

role model

sabotage

staff interaction

student performance

team player

versatility

women can't say no (lack of assertiveness)

Appendix J: Reformatted Transcript Sample

The transcript sample below is the reformatted version of the transcript presented in Appendix H. The interview number has been added after Marlene's abbreviated name and material that deals with a similar subject is spaced more closely together because the blank lines between paragraphs has been deleted.

53 Marl #1: Male, and he became the Science-Math Head.

54. Judy: Just out of curiosity, did you apply or was that a long time ago.

55. Marl #1: No, it was a long time ago. I didn't apply. I actually feel like a teacher, not as an administrator. So, I didn't apply for that position because of that. I mean, I feel, I have strong views on that. Sometimes we put teachers into positions ... the only way people they can advance is to become these administrations when really they are excellent teachers and we should keep them in the classroom. But ... that's how it is.

56. Judy: I've encountered that too. Did you encounter hiring advantages because you were a female Science teacher?

57. Marl #1: I don't think so.

58. Judy: Describe any opportunities for advancement you have had.

59. Marl #1: Can you clarify advancement?

60. Judy: Math-Science Head? ....

61. Marl #1: We all had the opportunity to apply; it was open to everybody in our department. So, I've had that opportunity. But now we only have opportunities to ... that's becoming less and less. But we have opportunities to, you know, to participate on committees and exemplar projects, and I don't know whether that's considered advancement or craziness - taking on extra work.

62. Judy: When you said, "as I would know", can you clarify what you meant?

63. Marl #1: Advancement also means being asked to - whether it's monetary or position wise. Sometimes I've been asked to sit on a committee in our board or district on exemplar projects or new curriculum, or things like that. I consider that advancement - And participating in those types of things. I don't know, sometimes you think that you are foolish for doing them because you are already busy enough. But that is a way to consider advancement – to be involved totally in the grassroots movement.

64. Judy: And to increase your profile. You wouldn't happen to know if whenever any of these opportunities arise if anybody in administration seems to encourage any person or any group more than another.

65. Marl #1. I would think that they always encourage certain persons to do them so that they can hold onto their job. We have a sort a Golden Boy network at our school.

66. Judy: Can you explain what you mean by that?
67. Marl #1: There are certain people on our staff who can do no wrong. They always get chosen to do things like 'best practices in teaching', although they've only been teaching two or three years. Everybody supports them a lot, they get a lot of recognition for the things that they do, but there are a lot of older teachers on staff that have been doing an excellent job for years and we seem to forget them. I just encountered that at this school. I taught at another school and that wasn't a problem. I've thought this was a community thing.
68. Judy: Do these people who are favoured have any special qualities or characteristics?
69. Marl #1: They are usually Phys. Ed. teachers and they are male.

70. Judy: That is similar [to my situation]. Where do you see your career taking you in five years?
71. Marl #1: In five years, I still think I'll be enjoying teaching all the courses that I teach. I think I'll be not coaching as much. I think I'll be doing an Envirothon group more and that type of thing. I do a lot of associate teaching. I was an associate teacher this year.
72. Judy: Associate teacher is with student teachers?
73. Marl #1: Yes.

74. Judy: What classes do you teach?
75. Marl #1: I taught everything this year. I teach biology and chemistry and grade 9 and 10 science.

76. Judy: How much coaching do you do? Just out of curiosity.
77. Marl #1: I've been coaching since November; I'll be finished in April. It's about ten hours a week.
78. Judy: Is this just for one team or do you do a number of different teams?
79. Marl #1: I do two different teams. And I sit on a school committee -- I'm the chair of a school committee called Strategies for Success. That meets once a week and we run an after school homework program and do remediation support for teachers for grade 9 and 10 students. I run the Awards Program for graduation, which is busy. That will start at the beginning of May and will be about 100 hours between May and graduation, which is in June. I mentor 25 students, so I'm a busy lady.

80.	Judy:	Your mentoring program – is that a school-wide thing?
81.	Marl #1:	Yes.
82.	Judy:	Does every teacher [participate]?
83.	Marl #1:	Not every teacher, only the teachers - well, we sort of get asked to do it. You say okay, you don't want to turn down the kids that need you. But not all the teachers [participate], but the Golden Boys Club - they don't do that.
84.	Judy:	It's sort of volunteer?
85.	Marl #1:	Yes, it's sort of volunteer, but expected somewhat. It's a hidden thing.