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Women in Science and Engineering: The Impact of Gender Equity Policies in Mexican Higher Education

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Graduate Program in Education

A thesis submitted in partial fulfillment of the requirements for the degree in Doctor of Philosophy

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**WOMEN IN SCIENCE AND ENGINEERING: THE IMPACT OF GENDER
EQUITY POLICIES IN MEXICAN HIGHER EDUCATION**

(Spine title: The impact of gender equity policies in Mexican higher education)
(Thesis format: Monograph)

By

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Graduate Program in Education

A thesis submitted in partial fulfilment
of the requirements for the degree of
Doctor of Philosophy

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

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WESTERN UNIVERSITY
SCHOOL OF GRADUATE AND POSTDOCTORAL STUDIES

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**Women in Science and Engineering: The Impact of Gender Equity Policies in
Mexican Higher Education**

is accepted in partial fulfilment of the
requirements for the degree of
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ABSTRACT

In a globalizing world, Mexico's higher education system is undergoing significant transformations. One of the more hopeful, positive transformations is the emergence or strengthening of gender equity policies in many education institutions. The equity-oriented policies, packaged in transnational policy spheres, are interpreted and set in motion based on the interplay of national, local and institutional contexts. While this emergent equity-friendly policy environment represents a positive movement for equity, its manifestations and effects remain understudied.

Considering that there is at least a policy environment supportive of gender equity, this study examines how gender equity plays out at the ground level. It examines the gender-equity policy environment—its manifestation and effects—in one graduate research department in the most prestigious Polytechnic University in Mexico. Through site observations and interviews with students, professors, and administrators, this research illuminates how gender equity is taken up and experienced by women in this male-dominated environment.

The research finds that gender equity has indeed made an intervention at the symbolic or discursive level of the institution. Also there are concrete manifestations, such as the presence of a gender equity office and the hiring of the institution's first female director. In general, gender equity provoked interest and anxiety in most of the participants interviewed. In interviews and at a public symposium of gender equity, some dominant scripts were repeated that tended to rationalize male dominance, but there were also more transgressive scripts and acknowledgments of the depth of inequity around gender and other social difference in Mexico.

Aligned with past research findings and institutional mantras, gender equity was often conceived in terms of ‘access’ and fair admission policies by administration and professors. Women graduate students reported much more directly about the ongoing discrimination within the program that ranged from being seen as less capable than males to more overt sexual harassment and bullying. Further, women who attempted to use the gender equity office to make a complaint were quite cynical about the apparent lack of any action. Finally, this study offers recommendations for a gender program, the Centre of Technology and members of the centre.

Keywords: Globalization, gender, Mexico, higher education, policies.

DEDICATION

Yatzil, you are my heart.

This accomplishment is in your honour, for all your love.

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I have come this far in life by the abundant grace of God, the strength of my life.

Looking back, I am surprised and grateful for all I have received during my time at the Faculty of Education. I have certainly been shaped as a person, student, and professional. I am in debt with Western University for the great opportunity of taking me as an international student.

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DEFINITION OF TERMS AND ACRONYMS

Campaign: A connected series of actions designed to bring about a specific outcome.

CEPAL: Economic Commission for Latin America and the Caribbean (ECLAC).

CONACyT: The National Council on Science and Technology. This organization was created to foster the national development in science and technology providing economic support for researchers.

Developing countries: nations with reasonable levels of poverty and low levels of human material well-being.

Graduate programs: in this project refers to Master's degrees and doctoral degrees.

Higher education: education beyond secondary school.

IPN: Mexican National Polytechnic Institute.

OECD: Organization for Economic Co-operation and Development.

Policy: "the dynamic and value-laden process through which a political system handles a public problem" (Fowler, 2000, p. 9).

SE: Science and Engineering.

UNESCO: United Nations Educational, Scientific and Cultural Organization

WB: World Bank.

PREAMBLE/PREFACE

A Teacher's Story

Following the book step by step was paying off; after the mid-term exam most students were demonstrating their learning and proficiency in the language. A few days later, she was reviewing a lesson depicting a dialogue between a man and a woman and the instructions of the book suggested dividing the group by sex for the pronunciation. So she did. As usual, her only concern was that everybody had a book so they had the opportunity to read the dialogue. As the students began the activity, the teacher did not realize the magnitude of the situation until the group stared at Jan and giggled. Jan did not know what part to read because physically he was a man, but his dress and behaviour were that of a woman. It was shocking!

By no means was this a matter of content or academic skills. This situation was about the young professor in power who failed to recognize her students and their differences. The problem was about how she, as a professor, acknowledged and treated a human being based on his/her sexuality. At that moment, Jan only looked down and froze with gloomy eyes. Meanwhile, the professor stood behind Jan to avoid the insensitive and inquisitive looks of his classmates. After this episode, there were no more activities from the book. There were only activities for the students.

The shocking experience with Jan made the professor pursue further education. Little did she know that by going back, she was embarking on a whole journey with challenges of and reflections on her entire education. The journey has had many pleasant and unpleasant surprises, which have prepared the path for analyzing her own story as a student and teacher.

Growing up in a small town at the South-West of Mexico, she learnt that there were certain rules that applied differently for girls and boys since elementary school. For example, she remembered that, when she was 10 years old, while her male classmates used break time to play in the backyard, she knitted because that was part of the curriculum for girls. Boys could do almost anything during breaks as long as they had a short haircut.

As an adolescent, she was forced to hide her abilities in mathematics and sciences because those subject areas were not acceptable for a girl. By then, students knew what trades to prepare for according to their "abilities": carpenter, electrician, and mechanics

for boys and the workshops to be a secretary, beautician, and decorator for girls. Something similar happened with her classmates in the undergraduate programs. Women and men chose their fields according to the same “abilities” such as engineering, physics and maths for men and nursing, education, and literature for women.

What seemed to be the normal gendered behaviour for a woman and a man back in her youth became critical as she continued with her studies: being a woman, a boy, a homosexual or a transsexual had influenced the education of individuals.

This is my story that grounds this project. As I started my journey to explore gender and education in my current program, I realized that ever since elementary school I faced discrimination, exclusion and sexism that saturated my experiences of every-day life. Back then, I managed, because as with Jan, I had access to education. More importantly, I knew how to keep a low profile in all my schooling in Mexico.

A few years ago I moved to Canada to pursue graduate education in a traditionally “feminine” field and my context and experiences changed overnight. Since then, I did not need to be concerned about sexual discrimination as my attention turned to my academic development. As a graduate student in education, I cannot help but wonder how other women in Mexico achieve their academic goals. Has the academic environment changed? What is it like to achieve ones goals as a woman in a male dominated field? These are the questions framing this study and work in the field of gender studies and education.

CHAPTER 1: INTRODUCTION

With political and social change emanating from globalization, Mexico is undergoing a significant transformation in higher education. A key dimension of this transformation is the broadening of access to higher education and an accompanying development of gender equity policy. The diversification in the composition of students in higher education disrupts old patterns of social behavior for women and men generating new forms of social relations between actors that deserve attention. My interest resides in talking with professors, administrators and especially female students in graduate programs to better understand how gender-equity policy is implemented in a leading male-dominated institution.

There is little information on the actual implementation of gender equity policies and the quality of the day-to-day participation of female students within graduate programs in developing countries such as Mexico. As my literature review illustrates, countries in the West have studied equity extensively in higher education, while developing countries have produced much less research with most of it reduced to measuring changes in access. However, increased educational access does not automatically translate to the eradication of social inequities for students participating in institutional spaces. For example, Millet (2005) observes the following regarding education of women in higher education:

While modern patriarchies have, fairly recently, opened all educational levels to women, the kind and quality of education is not the same for each sex. This difference is of course apparent in early socialization, but it persists and enters into higher education as well. (p. 46)

This study examines how a set of actors perceive and respond to gender (in)equity in a male-dominated Science and Engineering (SE) program that officially promotes a gender equity environment. I employed a case study methodology to understand the effects of

gender equity policy within one graduate program at the Mexican National Polytechnic Institute (IPN), which is one of the leading research universities in the country. I conducted open-ended interviews with five female students to uncover the quality of their participation, particularly around their experiences of inclusion and exclusion. Additionally, I conducted more directed interviews with male students, administrators, and professors to examine their conceptions of gender equity and its enactment in the program. This introduction sketches key components of the study and contextualizes the statement of the problem and approach.

Background

As many globalization theorists argue, interconnectivity and interdependencies across and between nations have intensified (Castells, 2011; Giddens, 1990; Buenfil, 2000). Inherent to these intensifications are technological innovation, the advent of the knowledge society, impulsive mass consumption, and the neoliberal conviction that anything and everything, including education, is a commodity (Marquez Mujica, 2002). With the rise of market logics, education remains a crucial component for the participation of both men and women to gain better possibilities of personal development in economic, social and political life. Yet, the rewards from education are quite finite, mostly benefiting those with high levels of education (Stromquist, 2005). Nevertheless, much of the development of a country depends on the education of its population.

...all countries, whatever their level of development, have been obliged to review and reorganize their capacities for accessing and benefiting from the high-level knowledge which shapes social change. For those with weak or non-existent capacity in this area, the risk of marginalization has accelerated sharply. Since 2007, the current global economic and financial crisis has wreaked havoc on many well-established institutions, thus altering the

landscape of wealth and stability within a very short time-span. (Meek, Teichler, & Kearney, 2009, p. 8)

Improving access to education then has become a major reform node in the transformation of a country's economic positioning. To this end, a readjustment in the female composition in higher education has taken place broadly. Current studies show that there are a growing number of women accessing higher education in various countries of Latin America such as Mexico, Panama, Peru, Venezuela, Chile and Colombia (Papadopoulos & Radakovich, 2005). In Mexico, the number of women in higher education has almost reached parity with men (ANUIES, 2007; Bustos, 2008). None-the-less, disparities among different disciplines and levels of higher education still exist.

Although women's access to higher education as a whole has dramatically improved, we know little about the everyday experiences of female students engaging in higher education in developing countries such as Mexico. Within this new framework for education, clearly, *how* women participate in higher education is important. This study seeks to contribute to our understanding of the quality of women's participation in a persistently male-dominated discipline. In the following paragraphs, I describe the establishment of policies oriented to improving women's access to higher education in Mexico and the impact on the practice of equity.

Educational policies

Interconnectedness among nations is not new, nor is the influence of international agencies exercise upon particular countries. International agencies like the World Bank, OECD, UNESCO, the Regional Office for Education for Latin America and the Caribbean (OREALC) and CEPAL, for example, play a significant role in influencing national educational policies in Latin America (Buenfil, 2000). Some initiatives begin in central

countries and their adoption in “peripheries” is assumed to occur through persuasion or imitation (Stromquist, 2002). However, “while similarities in policy shifts occurring in a wide variety of nations are clearly evident, it is also the case that these changes are mediated at the national and local levels by particular historical, political and cultural dynamics” (Rizvi & Lingard, 2010, p. 2). Thus, the influences of international agencies do not apply in a single uniform way in every nation; the initiatives are as dynamic as they are context-specific. Particular sites produce a resignification or reinterpretation of the global policies. As Buenfil (2000) states,

Global policies in education involving some uniformization of neoliberal criteria, measures, values, and strategies are well known both in industrialized and poor countries. However, the way in which their implementation is produced in each particular site produces their resignification or reinterpretation. The encounter between the global policy and the specific conditions of each case brings to the fore the complex tension between universality and particularity when one conceptualizes globalization and produces an interpretation of its effects on education. (p. 289-290)

The Mexican government, influenced by external agencies, has established gender policies nationally (Marquez Mujica, 2002). These policies have been an essential step for the promotion of women's empowerment in terms of education and human rights (i.e. Human Rights for women, 2008). Political and social change emanating from globalization, including these transnational policy flows, has altered the higher education system (as explained in Chapter 2). Policies in education, thus, represent a peculiar composition of values, “whose authority is allocated at the intersection of global, national and local processes” (Rizvi & Lingard, 2010, p. 3). The participation of women in the Mexican academy is impacted by these multiple scales.

Attention to gender equity in national policy has been apparent since 1974, with the *National Program for Women* that ensures the access of women to all forms and levels of the educational system and their permanent participation within it. More recently, the *General Policy for the Access of Women to a Life without Violence* (2007) highlights the demand for the elimination of gender stereotypes in institutions of education (Diario Oficial de la Federacion, 2007). This policy promotes the elimination of stereotypes in institutions of education, including higher education. Specifically, article 38 states that programs should be established to promote awareness about women's rights and respect for women. Thus, policies are designed to protect and support the access and rights of women to higher education.

Massification of higher education

According to Behrman, Birdsall and Szekely (2003), 18 Latin American countries, including Mexico, have increased access to higher education in the last decades achieving mass higher education. Mass higher education is defined as having an enrolment of 40 percent or more of the population age 18-24 (Stromquist, 2005). The entry of Mexico into globalization has been crucial to bringing its institutions of higher education to the front lines with its prevailing discourse that education is the major tool of economic progress in the 'knowledge society.' The optimistic side of the knowledge society is that it "needs more graduates, and those graduates will keep returning to study as lifelong learning takes its place in both work and leisure time" (Laurillard, 2002, p. 133).

Accordingly, Mexican universities have expanded their population to allow more students to participate at this level so that the country and its population can be globally competitive. Bustos (2003) and Instituto Nacional de Estadística y Geografía (2011) suggest that the number of Mexican students in higher education and its female

composition have increased in the last few years (See table 1). The following figure suggests that the number of students has increased since 1980 to 2009 to the point that there is now equal access of women and men in higher education and that the number of universities has augmented.

Table 1. *Ratio of men to women in Higher Education in Mexico*

Scholar year	Total	Men	Women	Universities
1980/1981	935 789	619 213	316 576	892
1990/1991	1 143 040	677 795	465 245	1 662
2000/2001	1 846 964	974 306	872 658	3 394
2008/2009	2 573 427	1 308 613	1 264 814	5 073

Modified from INEGI (2011). Cuadro 4.26

Despite overall parity, a closer look reveals that women entering higher education and graduate studies tend to choose the traditional feminine careers of education, humanities and nursing with little representation in the areas of Science and Engineering (Bustos, 2003; ANUIES, 2004; Enfoque Estadístico Institution, 2000) (See Table 2). Furthermore, the percentages of women pursuing Master’s and PhD degrees have declined, with women most under-represented in traditional male-dominated programs at the graduate level (See Table 3).

Table 2. *Ratio of Students by Field in Bachelor’s Degrees.*

Field	2006/2007		
	Total	Men	Women
Bachelor’s Degree	2,150,146.00	1,089,100.00	1,061,046.00
Agricultural Sciences	48,982.00	32,566.00	16,416.00

Health Sciences	202,866.00	72,746.00	130,120.00
Natural and Exact Sciences	41,684.00	21,288.00	20,396.00
Social and Administration Sciences	1,008,883.00	419,460.00	589,423.00
Education and Humanities	129,063.00	41,563.00	87,500.00
Technology and Engineering	718,668.00	501,477.00	217,191.00

Modified from INEGI (2011).

Table 3. *Ratio of Students by Field in Graduate Education*

Field	2006/2007		
	Total	Men	Women
Graduate Education (Special degrees, Master's and PhD)	162,003.00	82,553.00	79,450.00
Agricultural Sciences	2,772.00	1,772.00	1,000.00
Health Sciences	23,891.00	12,143.00	11,748.00
Natural and Exact Sciences	8,194.00	4,625.00	3,569.00
Social and Administration Sciences	73,713.00	38,352.00	35,361.00
Education and Humanities	34,755.00	12,825.00	21,930.00
Engineering and Technology	18,678.00	12,836.00	5,842.00

Modified from INEGI (2011).

A number of explanations have been offered to account for the attrition of female students from the Science and Engineering (SE) field, including a culture of discrimination, negative gender stereotypes, financial constraints, and family influence. Nevertheless, a few women resist traditional gender ideologies (Gilbert & Taylor, 1991) and do participate and complete these programs. The institution selected for this study is situated in one of the most diverse cities in the country, having not only a greater number of graduate students

than other states, but also the highest proportion of women in the male-dominated fields of SE in Mexico (ANUIES, 2004).

Statement of the Problem

This study investigates gender equity policies in Higher Education in Mexico by focusing specifically on their impact on the experiences of female graduate students in Science Education programmes. The study recognizes the current global, national and local institutional gender equity policies that seek to broaden the participation of women in graduate science education programmes. The impact of these policy statements on the lived experiences of female students has not been systematically researched. This study, therefore, attempts to provide an empirical context of these gender equity policies in a unique higher education setting in Mexico.

The establishment of gender policies in schooling is important, but does not automatically translate into a shift in mentalities, practices or even material manifestations. I believe that gender equity policies and traveling discourses on gender often remain in the conceptual dimension without real will and action to combat and alter gender inequities at the local level. Certainly, gender policies grant and promote females' formal access into every field of higher education, which is one crucial step towards realizing gender equity, but they fail to acknowledge and combat the multiple forms of possible subordination and discrimination that women experience in their daily lives (Mohanty, 2003). Women will not identify problems, much less know how to solve them, without a new understanding of forms of local subordination (Stromquist, 2002).

Against the Mexican macro policy backdrop, Palomar Vereá (2004) argues that Mexican higher education institutions are not obliged to secure gender equity and penalize acts of gender discrimination or gender violence. Then, it could be assumed that these

policies are largely symbolic. Rizvi and Lingard (2010) define symbolic policies as political responses to pressures; these symbolic policies can carry no or little commitment to actual implementation and usually do not have substantial resources attached. Those institutions that select to implement institutional gender policies face a critical question: To what extent are their gender equity policies ‘symbolic’?

In Mexico, studies have focused on describing the access to tertiary and elementary education by women (Bustos, 2003; Bustos, 2008; ANUIES, 2004). However, there is a paucity of research examining how the gender-equity-friendly policy environment impacts the particular experiences of the actors in graduate programs in developing countries (i.e. Lynch & Nowosenetz, 2009), especially the experiences of women. Little is known about the actual implementation of the policies and how they modify the academic environment. It is imperative to learn about the tensions between policy intentions and practices because it is in practice that change in the traditional patriarchal norms of gender may occur.

Despite the fact that the site selected for this study has a main orientation in SE, it is one of the few institutions implementing policies designed to promote gender equity. In addition to the policies, the institution implements programmes and campaigns that foster greater gender sensitivity and awareness among SE students, thereby contributing to a gender-friendly learning and working environment (Lynch & Nowosenetz, 2009, p. 568). In other words, the institution seems to be concerned with, and act towards a gender-equity-friendly environment. In this particular institution, it is critical to examine the implementation of these policies and their effects on the members of the Mexican National Polytechnic Institute (IPN) in order to illuminate the impact of these policies on various academic and social experiences.

Aims of the Study

The major focus of this study is to assess, in a gender equity policy environment, the quality of women's participation in the male-dominated programs of SE in the National Polytechnic Institution of Mexico. This detailed study of different administrative, teaching and learning registers of gender equity will highlight some of the remaining challenges of this leading institution. This study's aims include:

- To identify administrative strategies intended to advance gender equity at the program level. Also, strategies that seek to promote and advance the participation of women in the Centre of Technology.
- To examine specific teaching initiatives and practices intended to address gender equity needs at the level of learning in SE graduate programs.
- To analyze female students' participation and inclusion in the program.

Research Question

Considering that there is an emergent gender-equity-friendly policy environment in graduate programs in Mexico, the general question of my study is: *how is gender equity conceived and enacted at the ground level?* The subsequent questions are:

1. What strategies have administrators initiated for professors and students?
2. What do professors who are supervisors of graduate students do pedagogically to ensure that gender equity policies are implemented?
3. What obstacles and strategies do female students find in the program?

Significance of the Study

This study contributes to the field of gender equity policy implementation in higher education in modernizing non-central nations. The findings of this research will be valuable

for policy makers, administrators, and professors in higher education who want to encourage and build a more supportive environment for women and other marginalized groups. The results may also be significant for other institutions with a predominantly male population in developing/globalizing nations.

Students, professors and administrators involved in this study have been given the opportunity to reflect upon their participation in their graduate programs and they may be able to act upon their insights. Studying issues of equity in male-dominated fields is also significant because of the prestige and authority that fields like technology and science enjoy in this era of globalization and technological innovations. Furthermore, since the implementation of policies occurs at the micro level, one can analyze how the implementation and resignification take place in a specific context with individuals, and, principally, for those individuals whose voices are (often) silenced by the power relations inherent in the institutions. It is crucial to hear the voices of those who have been systematically silenced by the tradition and imperatives of the institution and who are the objects of the policies.

This dissertation is divided into six chapters. Chapter 1 gives an introduction to the research project. The context and framework in Chapter 2 develops a conceptual framework for the study of women in their own context. Chapter 3 presents the literature review on how gender equity policies have been understood and practiced in universities of various countries. The methodology in Chapter 4 describes the case study and how this project was developed, understood and designed. Chapter 5 describes and interprets the data and Chapter 6 offers the discussions, provides suggestions for implementation, further research and recommendations.

CHAPTER 2: CONTEXT AND FRAMEWORK

In this chapter, I discuss social dimensions that relate to the emergence and development of gender equity in the context of higher education. I begin by describing my framing of the research study through postcolonial feminist theory. I also provide a brief description of symbolic and material policies (Rizvi & Lingard, 2010). I then explain how globalization impacts visions of women and gender (Women in Development and Gender and Development) and how they are negotiated locally. Finally, I discuss women and higher education in the context of Mexico, specifically at the IPN.

Postcolonial Feminist Theory

Western feminisms have been highly influential in global perspectives of the international organization of women and women's lives. These feminisms have been centrally informed by white, middle-class, heterosexual women who have developed understandings of oppression in Developed Countries according to western concepts of sex, gender and patriarchy. Western feminists have framed sexist oppression as the central political agenda for females globally, failing to notice that the realities of women in other cultural contexts differ from theirs in terms of race, class and location. Thus, White Western feminists in the 1960s and 70s tended to overlook other forms of oppression that also affect the lives of women. When feminism centers on the critique of western-forms of patriarchy, it tends to disregard other forms of discrimination that women from other regions might encounter in their everyday lives.

According to postcolonial feminist theory, women in struggling economies are measured and positioned according to an ethnocentric western perspective that assumes they are sexually constrained, ignorant, poor, and victimized, among other assumptions.

Spivak (1988) argues that the perspective of the white middle class heterosexual and western woman is taken for the voice of all women, rendering those outside the West silent. Spivak bases her argument as inherent to Western ontologies that conceive Europeans and the “Other” as two elements far apart from each other where Europeans must speak for the colonized.

Like Spivak, Mohanty (1988) criticises the tendency of Western feminist research to “colonize the material and historical heterogeneities of the lives of women in the Third World” (p. 62). In Mohanty’s view, the assumptions of privilege and ethnocentric universality along with the Western influence on the Third World can have a damaging effect on women living in the ‘Third World’. The concept of difference has been a key issue when discussing the significance of the context and the findings of this study.

Postcolonial feminists argue that Western women do not recognize their position of power and the impact of their relative privilege on other women. For example, bell hooks (2005) argues:

White women who dominate feminist discourse, who for the most part make and articulate feminist theory, have little or no understanding of white supremacy as a racial politic, of the psychological impact of class, of their political status within a racist, sexist, capitalist state. (p. 61)

These women can oppress other women from their own position or with their dominant discourses on gender oppression, subsequently silence other women. For example, Chater (1994) described her experiences in working with a Black fellow and how her voice was the one to be heard in public places based on her whiteness.

Because of her apparent "shyness" and seeming timidity in the face of authorities, I saw it as a matter "of course" that I did the interviews and public speaking at a (white feminist) rally we linked up with. We did not discuss the

possibility of her taking up that public space and empowering herself and Black women in the process. Then, by publishing an account of this experience in a predominantly white feminist journal, my voice again occupied a cultural space organized by racism, i.e., white exclusivity. I am not saying that I should not have done or said anything as a white woman in white - dominated spaces. My point is that in the process of anti – racist transformation, decisions about who speaks, about whom, and how, and where, involve issues of privilege which need to be examined (p. 103).

There are also privileges and differences among women based on their race, class and gender while other women still struggle to be heard.

Although Lewis (1993) describes the silences of women and other subordinate groups; for her the fact of “knowing” is what is considered an act of insubordination, while exposing knowledge, speaking in a public space, using language to articulate such knowledge and refusing to believe that the dominant discourse speaks for all is used to justify violation. Although appealing, Lewis (1993) fails to recognize that the silence of white women often covers power whereas the silence of other women is based on marginalization in the classroom and fear that they will not be heard (Weir, 1991).

Mohanty (2003) also challenges the universal claims of feminism to speak for all women. Mohanty identifies “women as a category of analysis” (2003, p. 22) that refers to the feminist tendency to assume that women worldwide are a homogeneous group produced on the basis of secondary sociological and anthropological universals. The idea of a universal woman fixes subjects and robs them of their political and social agency (Mohanty, 2003) because of the historically specific material reality of widely diverse groups of women. For Mohanty, the historically specific material reality of groups of women is significant to their representation. Mohanty emphasizes that the idea of homogeneity among women is mistaken because of specific realities of groups of women

differentiated by wealth, race, class, local identity, religion, ethnicity, and sexual preference. The experiences of women must be theorized and interpreted within specific societies in order to effectively change them (Mohanty, 2003). In other words, gender analysis requires particular study of local interactions in institutional spaces with attention to the national and global interaction as well. Mohanty argues for a specific historical analysis recognizing the socio-historical and cultural specificities of their existence and the differential value attached to their exchange. In the context of my study, it is essential to examine women in their specific lived context of Mexico so that consideration can be given to the culture and the socio-historical specificities of the country or, in this particular case, of the institution.

Western feminisms consider women as an oppressed block of a homogeneous group with the same disadvantages and problems. With this idea in mind, policies are globally prescribed and all women who access graduate education are assumed to have the same opportunities/disadvantages. The problem with representing women as a group is that this conception does not take into account the unique experiences of the women who are “different” from the western view and who vary among themselves. Western feminisms assume that all women are somehow oppressed in the same way, and overlook the concerns of women of color and working class women, for example (hooks, 2000). Western feminisms have historically ignored concerns of race and class that affect the lives of women (hooks, 2000) and issues that emerge from the specific context or community in which women reside.

Postcolonial feminist theory interrogates the Western universalist notions of all women. For Mills (1998), postcolonial feminist theory “has moved from a rather parochial concern with white, middle-class English-speaking women, to a focus on women in

different national and cultural contexts” (p. 98). Black, Third World and (some) White women have very different histories in terms of an inheritance of slavery, forced migration, colonialism, genocide, and imperial conquest (Tong, 1998). These complexities are also important to understanding the diverse experiences of women in education. Women in a country such as Mexico have a particular context in terms of economy, culture, language, history, and values that make their experiences and challenges in graduate studies distinct from women in western countries.

Ng (2005) argues that gender, class and race differences must be situated and analyzed in relation to a specific social formation, which have to do with struggles by particular groups of people. In the context of my study, postcolonial feminist theory suggests that the experiences of Mexican graduate women vary and their historical, social and personal context should be considered in the analysis of those experiences. The lived realities of Mexican female students are different from women in the West, and despite sharing the same social location as higher education students, in other places difference in ethnos, culture and geopolitical location shape Mexican women’s experiences in ways that are worth examining.

Furthermore, the construction of gender binaries inherent in western feminisms locates all men as superior to women. However, hooks (2000) points out that women’s liberation defined as women in lower-class obtaining the same advantages as men is highly problematic; there are men in the lower class who do not have social, political and economic power. Furthermore, there are women in upper classes or positions who oppress other women (hooks, 2000). Thus, not all men are the enemy or all women allies. Postcolonial theory explains that women are different in terms of class and race (Ng, 2005)

and that these factors in conjunction with sexism determine the oppression, discrimination, exploitation and experiences of women in education (hooks, 2000).

By taking a postcolonial feminist framework, I recognize that women (or Mexican women) do not belong to a homogeneous group. They come from diverse backgrounds in terms of wealth, race, class, local identity, religion, ethnicity, and sexual preference. Postcolonial feminist discourse rejects essentialism and absolutism (hooks, 1984; Mohanty, 2003) that visualize women as a block of women with the same challenges. Thus, entry of some women in the fields of engineering does not automatically translate into success or failure for all women, or assume that women do not face barriers to achievement. Women's experiences as students in SE take different trajectories as defined by their social and cultural context and their interactions with other female and male students, staff and faculty. Feminist postcolonial theory, then, offers a lens to support an informed and situated examination of the cases in this study.

The Power of Globalization in Local Policies

Giddens (2006) states that globalization is in many respects not only new, but also revolutionary because it is greater in scope and accelerating more rapidly than ever before. With the new technology and fast communication, the world has developed a process of increasing connectivity and interdependence that brings the constant movement of goods, jobs, and people. Thus, it is no longer possible to talk about one individual or localities in isolation, but only about global communities and nations. Even more traditionally bounded spheres such as national educational systems have been impacted by globalization. Particularly, policies are no longer generated at the local or national level, they emanate from the outside before they are played out internally.

The connectivity and interdependence among nations provides the perfect scenario for transnational actors that impact the implementation of national and local policies. In the following section, I discuss the impact of globalization on higher education in developing nations. I then move to specifically examine how globalization impacts upon gender education equity policy and practice in developing countries. Finally I describe the geopolitical and social context of Mexico and its education system to give a sense of the gender education equity tensions that exist in this developing nation and to set the gender education context for my study.

The Impact of Globalization on Higher Education

Economic globalization has impacted higher education in a number of ways through the reduction of public spending, fostering entrepreneurialism, the privileging of disciplines linked to the market, and the promotion of private over public education (Marginson, 2011). External factors drive universities to develop links with corporations and industry, fostering massive oppression of institutions to create massive entrance to education, privatizing education, creating new measures to achieve global targets (Olssen & Peters, 2005), and establishing policies based on international agreements (Torres & Rhoads, 2006). Hence, universities, guided by a climate of economically driven knowledge production, become resistant to subjects “dealing with ethics, social justice, critical studies, and gender studies” (Stromquist & Monkman, 2000, p. 14). Institutions of higher education in Mexico are not an exception; they are also immersed in this context of globalization that in turn permeates the life, relationships and access of students to higher education. Indeed, there may be even greater pressure for higher institutions in ‘developing’ nations to adhere to neoliberal reforms in attempts to compete with developed nations in the knowledge economy.

In earlier decades, higher education institutions in most countries established their own policies in a national sphere. However, the current state of globalization has led to an erosion of the national regulatory and policy frameworks (Van Damme, 2005) in which universities have been transformed. The new policy framework takes place outside the institution and, many times, outside the country. Transnational Corporations and International Agencies make broad demands on universities and nation-states for privatization and academic standardization. Such is the case in countries such as Mexico, Brazil and Argentina, which have been pushed towards the privatization of higher education as a precondition to further borrowing by the IMF and the World Bank (Torres & Rhoads, 2006).

The processes of transformation, faster communication and rapid technological advances have created an environment of constant learning that demands highly qualified knowledgeable workers. These workers have also increased the demand for higher education (Van Damme, 2005) worldwide in their search for the knowledge required to survive in this time of constant change. This situation creates a twofold problem. On the one hand, institutions and governments do not have enough resources to deal with the high numbers of students wanting access to higher education. Thus, this situation leaves some demands for education unmet, mainly among people who are not able to finance the cost of higher learning and/or private education at home or abroad. Rather than be oriented to the public good, higher education becomes an institution that reproduces inequity and sets the stage for severe educational consequences (Brennan & Naidoo, 2008). On the other hand, there is the problem of efficiency and accountability (Torres & Rhoads, 2006) for those students who can afford higher education. The high number of students affects the

efficiency of professors who are supposed to teach a large number of students, and who are to do so with the same inadequate infrastructure.

In addition, the needs of globalization and the knowledge society seem to create demands and exigencies towards the creation of universities as knowledge centres. According to UNESCO (2005), “knowledge societies are about capabilities to identify, produce, process, transform, disseminate and use information to build and apply knowledge for human development” (p. 27). Universities, then, are urged to become centres of production in the development of technology and scientific research (Van Damme, 2005), which are strategically important mainly for corporations. The engagement in research works basically in favour of producing technology-driven economic benefits that again reduce the autonomy of universities (Stromquist & Monkman, 2000). Globalization also pushes higher education towards educational standards and emphasis on evaluation. Major efforts are made in order to reform academic programs that produce homogeneity across nations. For example, in Mexico, efforts are under way to reform various professional preparation programs in a manner consistent with those operating in the United States (Torres & Rhoads, 2006).

The traditional professional culture among professors and students in the search for truth and openness to intellectual inquiry has been redirected under performativity toward competition, strategic planning, performance indicators, quality assurance measures and academic audits. In other words, norms that had traditionally been part of university life may become obsolete (Stromquist & Monkman, 2000). The environment of competition among departments (or individuals) values only a particular knowledge-based economy (Wiggans, 2009); however, it diminishes group work and/or community needs and the quest for knowledge not directed to the economy. This environment, according to

Stromquist and Monkman, leads to the growth of conflicts between schools or individuals that will gradually ignore areas of social importance such as equity, the humanities, sociology, and pedagogy, among others.

Thus, there remains a kind of tension between: (1) increasing competitiveness in the knowledge economy with attention to access and participation of women and other minority students through, for example, gender equity policy; and (2) the potential inequities produced out of the same neoliberal package that demands efficiency and privatization reforms. Where 'gender equity' is founded on enlarging human capital for modernization, the kinds and qualities of new opportunities for women and other minority groups need to be scrutinized.

Currently, policies are "affected significantly by imperatives of the global economy, shifts in global political relations and changing patterns of global communication that are transforming people's sense of identity and belonging" (Rizvi & Lingard, 2010, p. 2). Rizvi and Lingard suggest that the way that policies are articulated and promoted can be described as symbolic and material. For them, the main distinction between symbolic and material is based on issues of resourcing, commitment, implementation and sanctions.

a) *Symbolic policies* are usually the result of external pressures for their development and are forged in order to build consensus around certain ideas. They carry little or no commitment to actual implementation because of the lack of substantial funding or consequences. At the same time, these policies also can lack clarity and tend to have vague goals statements; thus, there is absence of clear and functional strategies and implementation plans. However, Rizvi and Lingard (2010) warn that although these policies may not be as well formed or implemented as a policy should be, they still have effects. For example, even the existence of a policy can function as a first step in a longer-

term strategy or a way of legitimating a particular political view. Thus, symbolic policies can alter the climate in which some issues are discussed and addressed.

b) *Material policies* have more visible support in terms of funding and a strong commitment for implementation. These policies are well established through clear goals, strategies for enactment and sometimes evaluation mechanisms to ensure achievement of goals. Some of these policies are sanctioned and the failure to pursue them can lead to defined consequences. Another characteristic of material policies is the complexity of the envisaged implementation strategies.

Globalization permeates the establishment of material or symbolic policies at the national and local level in a country such as Mexico. Mexico, a developing country, is pressured to follow mandates by external forces that direct the socio-political context. But even when policies are somehow standardized by external influences, they are inflected by the particularities of local and national contexts.

Women in Development (WID) and Gender and Development (GAD)

Globalization is a concept that has been used to describe almost any aspect of current life, ranging from the power of transnational organizations, the weakness of the nation-state system, the rapid circulation of ideas and the movement of people. Educational policies and gender equity have also been influenced by international forces. Such international influence creates new limits and tensions on a nation's sovereignty and its policy makers, including influencing the dynamics of gender equity in higher education (Torres, 2006), that once had as its priority the national good that are now stretched beyond national borders.

Economic globalization has forced the discussion of gender equity in developing nations (Henry, 2001). Accordingly, international agencies have increased their interest in

gender in education. This interest in gender reached its height in the 1990's through the publication of the United Nations Millennium Development Goals in 2000 (MDG) (Fennell & Arnot, 2008), which required all countries to promote gender and achieve equality by 2015 (UN, 2010). With these goals, the MDGs established legitimacy for nation-states to examine and develop comprehensive policies and practices promoting gender equity in education.

Such global goals were particularly welcomed in some countries since they identified and qualified the character of local gender problems. International forces then were helpful in demonstrating to national governments the range of factors, variables, forces and constraints contributing to gender inequality. Despite some advances, tensions arose when the diffusion of Western ideas on gender and education policies assumed a universal context for developed and developing countries. Fennel and Arnot (2008, p. 3) explain:

such universal gender targets also carry with them imperial and colonial legacies of international interference in nation building and national educational systems. Gender equality, although portrayed as a human right, is now also associated with the new demands of neo-liberal economic globalisation, encouraging national regimes and indigenous cultures to move towards western versions of modernisation.

As these authors suggest, when international forces interfere with a national system, these bodies can impose violating ontological values of gender, education and equity on local populations. With these values come less explicit economic processes that can rearrange existing practices of say market trade. Dominant gender ideas, although portrayed with good intentions, work with imposition and neoliberal forms of power. Subsequently, western development agencies have to negotiate the guiding assumptions of their policies for education with those of the national culture.

Gender equity discourses in the context of ‘developing’ countries have been largely informed by the Women in Development (WID) and the Gender and Development (GAD) approaches. Liberal feminism was the basis for the language of political strategy used by WID founders (Rizvi & Miller, 1995). The 1970’s was a productive decade for the liberal feminism movement that explained women’s disadvantaged position in society in two ways: 1) their lack of rights and; 2) the entrenchment of socialization of the gender roles (Comack, 1999). The Women in Development (WID) approach first emerged out of the First UN Conference for Women in Mexico City in 1975 to be followed by the World who began initiating projects to integrate women into development for economic as well as educational ends (Tickner, 2001). The goal of WID was to make women visible in the development process by showing the positive synergies created by investing in women and then reaping benefits in terms of economic growth.

Despite its intentions in investing in women, the WID approach did not impose the exact same gender education environment on all nation-states over the last decades. There was a recognition that policies depend on particular historical, political and cultural dynamics (Rizvi & Lingard, 2010). Nevertheless a universalizing WID perspective has influenced the policies among various developing countries to promote equity (Levy, 1996). These policies are similarly enacted in Bangladesh, Namibia and Mexico, for example, through the establishment of separate policy and institutional structures designed to serve the social and educational interests of women, broadly defined (i.e. UNIFEM,). These policy institutions are given the mandate only of women, as if these women had nothing to do with other activities or organizations. The institutions focus their attention on the development of women-specific policies, programmes and/or projects. Finally these institutions are usually under-resourced and marginal in comparison with other government

expenditure. Broadly speaking, this is the general policy environment that WID has produced in developing countries.

The WID approach has been critiqued based on its attention to women only, because it overlooks the importance of men and the inter-relationship between men and women in gender equity strategies. In recent times, the focus in gender equity strategies in developing nations has been on gender instead of the women only approach. The Gender and Development (GAD) approach focuses on gender relations as an analytical category with the recognition of the sub-ordination of women and relations of power in gender relations (Levy, 1996). If women are to be empowered, attention has to be given to both women and men and how to change their relations (Tickner, 2001). The shift from women to gender relationships between women and men has also been influential in developing policy circles through the international agencies.

Influenced by the WID and GAD discourses, international agencies and national governments have implemented strategies in the sectors of education, economy and society in order to advance the condition of women and/or gender in developing countries. A number of actors are involved in transnational and national policy making.

International agencies: these institutions define gender problems as those faced only by women who are poor, rural or marginally urban whose basic needs are confined to the domestic sphere. In the area of education, agencies tend to consider that students' preferences are the result of personal choices (as opposed to being structured by oppressive socialization experiences). Consequently, programs supported by these agencies do not work towards challenging the inter-relationship of gender and consider that women are, as a group poor and generally disadvantaged.

National governments: developing countries have been shaped by declarations in meetings organized by the UN. Influenced by women from the North, the UN has taken usually a WID approach towards developing countries. In the area of education, national governments identify the main problem affecting women as one of access; particularly to primary education. Thus, one of their initiatives is to establish policies to grant and improve access through the creation of more schools (usually private) at every level. In brief, governments operate on a narrow definition of women's problems and avoid discussion of power imbalances.

In other words, whether these initiatives and policies are implemented by international agencies or national governments, women are considered as a block of women in need of being rescued, all of whom have the same problems of poverty or lack of access to education. This approach of homogenizing the plight and needs of women is highly problematic because it silences ideological and material obstacles that affect women that arise from their social and cultural context. Thus, international agencies and national governments often fail to examine the tensions of power between women and men and its consequences locally. Given the diversity of local conditions and historical dynamics, a strong area of debate has centered on the efficacy of the "block of women" approach to the improvement of gender education and equity. By focussing on access and the development of poor women in developing countries, international agencies and governments overlook the quality of education and particularly, higher and graduate education.

The Context for Gender Relations in Mexico

Mexico is part of North America, along with Canada and the United States. It is a federation comprising thirty-one states and a Federal District, the capital city. Rich in natural resources, its varied climate supports a large number of different species of flora

and fauna. Mexico has a total area of 1,972, 550 km² comprising a continental land mass and islands. It is bordered on the north by the United States, on the south and west by the Pacific Ocean, on the southeast by Guatemala, Belize, and the Caribbean Sea, and on the east by the Gulf of Mexico. With an estimated population of over 112 million inhabitants, Mexico is the 11th most populous country and the most populous Spanish-speaking country in the world.

More than 75% of Mexico's population lives in urban areas, principally Mexico City (around 20 million inhabitants), Guadalajara and Monterrey. As expected, these mega cities suffer from well-known global-city challenges such as rapid urban spread, air pollution, water scarcity, poverty, social segregation and vulnerability (Kotter, 2004). Rural areas face their own challenges particularly in terms of basic needs, vulnerability, livelihood, and social exclusion (Bennell, 2007). Mexico's economic policies, as with other Latin American countries, embrace international integration and export-based growth. The export/import sector has grown substantially since the 1994 NAFTA agreement with Canada and the United States.

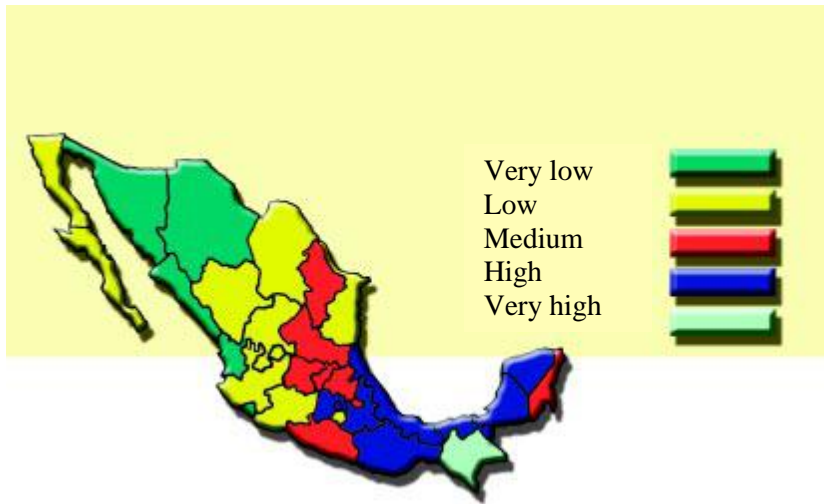
During the last century, the world witnessed rapid changes in the geopolitical world order. Many former colonies such as Ghana, Kenya, and Jamaica gained their independence after hundreds of years of European colonization. Although Mexico gained its independence in 1810 from the Spaniards, it shares the same neo-colonial characteristics as ex-colonial countries. These include: "having larger amounts of foreign debt, diminishing levels of political autonomy and economic marginalization resulting from unfair global economic policies" (Wiggan, 2009, p. 23). Further, Mexico has obviously been deeply impacted by its proximity to the United States, which emerged as the new imperial power in the capitalist world in the 20th century (Fergusson, 2008).

A gender perspective became solid in Mexico after the formal creation of the Millennium Development Goals in 2000. National organizations have taken up these policies and goals to promote gender equity and have aimed to achieve the goals by 2015. By recognizing gender discrimination, the government accredits equity among women and men, promotes women's rights and establishes the same opportunities for the female population as it does for males (Zúñiga Morales, 2008). With the advancement of women to the economic domain as indicated by their active participation in diverse traditional and non-traditional occupations, gender relationships have been altered. However, patriarchal institutions still maintain women's subjugation in different forms (Zúñiga Morales, 2008).

In this regard, Maldonado Montoya's (2003) study is informative on gender development and discrimination in terms of basic education, secondary education, higher education, graduate education, literacy, remuneration, and employment/unemployment. Montoya found that these descriptors are topics of concern for the entire country; however, discrimination towards women is notorious in some provinces which are less economically advanced. See Figure 1 below.

Maldonado Montoya (2003) suggests that changes in terms of gender have been taking place principally in the North part of Mexico while work remains to be done in the South provinces. One of the problems, according to INMUJERES (2007), is that even when there has been a transition in terms of gender discrimination, people still persist in using gender stereotypes especially for women. Discrimination on the basis of sex is still a motive to discard a woman for a position or omit their participation in traditional male fields in the public and private domains. In other words, gender discrimination affects the professional advancement of individuals (INMUJERES, 2007).

Figure 1. *Levels of Gender Discrimination by Province.*



Source: Maldonado Montoya, 2003 (p. 50)

Despite global discourses of gender equity and considerable advances in movements toward gender equity in the last couple of decades, gender discrimination is persistent in many dimensions of daily life not only in Mexico, but in the world. Even where there is global awareness and legal avenues for promoting gender equity, there is still gender discrimination based on sex in the socio-political structures. For example, in no region of the developing world do women have the same economic, legal and social rights as men. UNIFEM (2010) reported that women are more likely than men to face poverty and hunger because of the systematic gender discrimination in terms of education, health care, employment and control of assets.

In Mexico, women in paid employment devote an additional 33 hours to domestic chores per week, while men's weekly contribution is six hours (UNICEF, 2007). These findings are similar to the ones reported by OECD (2011), in which it demonstrates that Mexican women between 15 and 64 years of age spend more time per day working for the family at home (i.e. cooking, gardening, and cleaning) than men in all the nations studied,

followed only by Turkish women. This means that despite gender awareness and gender discourses worldwide, domestic chores at the national and local level are still considered to be the responsibility of women which has not changed over time. While there have been some noticeable changes in terms of awareness, challenges remain in changing practice.

Gender and Education in Mexico

Historically, Cordova Osnaya (2005) explains that at the end of the nineteenth century, female students learned writing, grammar, geography, history, first aid, hygiene, women's role in society, the economy of the house, painting, languages, music, motherhood and teaching within the secondary school for girls. The government of Porfirio Diaz (1876 to 1880 and from 1884 to 1911) believed that women were only able to perform highly gendered domestic activities such as taking care of the children (Cordova Osnaya, 2005). With this notion in mind, it is not strange to find that the government of that time encouraged women to teach children (Senado de la Republica, 2004). This orientation is said to relate more to the stereotypical attributes to women than the actual ability through the belief that women are more person-oriented and that they value social, communication and interaction patterns associated with teaching (Poole, Bornholt, & Summers, 1997).

Henry (1994) points out that universities were founded on elitist values and embedded in the larger historical trajectories of patriarchy, colonialism, and capitalism. These institutions, according to Henry (1994), "soon became associated with the image of ivory towers as it depicts a place where prestigious groups of wise, usually white, men pontificated about society away from the pressure and harsh realities of life" (p.42). The university resided outside the domestic domains circumscribing women's lives. By the beginning of the XX century, there was no official policy restricting women from enrolling in high school or higher education. Still, the university was comprised solely of a male

population environment. Women were barred from the university through social convention and lack of opportunity (Alvarado, n/d).

Millet (2005) also points out the exclusive dominance of males in the more prestigious fields directly serving the interests of patriarchal power in industry, government, education and other institutions at the material level. That is, there was no need of an explicit written policy that allowed or did not allow women their access to higher education; most female students knew that higher education was not for them.

During the early 1940s, the deans, directors and administrators of the eight public universities began to organize meetings to discuss the problems that they were facing in Mexican institutions of higher education. In 1948 these (male) leaders decided to create a national permanent association of universities to regulate these meetings, establishing the *Asociacion Nacional de Universidades e Instituciones de Educacion Superior (ANUIES)* (SEP, 2003). Along with other factors such as national feminist movements (i. e. Liberation of Women Movement, Women in Action Association), international conferences (The 1st World Conference on Women in Mexico in 1975), and the establishment of more higher education institutions, Cordova Osnaya (2005) suggests that the statistics by gender presented by ANUIES in 1970 played a significant role in the mass access to and incorporation of women in higher education in this decade.

Currently, there is an impressive consensus of basing future growth of the university on educational performance. It is broadly believed that higher education and research have a positive impact on national economic growth and competitiveness, as well as on individual employment options and economic stability. While investors in higher education (e. g. governments, international agencies) are demanding quantitative evidence of the results of the higher education sector, consumers' perceptions influenced by national and

international rankings have a significant impact on school choices. In this context, higher education systems in Mexico might address broad objectives of enrolment and growth (met through private education), equity, economic production and employment (Ordorika, 2004).

According to Brunner et al. (2008), the Mexican government's tertiary education policy strongly emphasizes economic development and social integration and seeks to achieve three objectives: a) expanding coverage with equity, b) improving the relevance and quality of the provision of tertiary education, and c) coordinating the tertiary education system and its greater integration, while taking into account the principle of institutional autonomy and the State at both the federal and state levels. These statements are also found in the National Education Program, 2001-2006 (Programa Nacional de Educación - PRONAE).

Since the 1980s, secondary and higher education in Mexico had undergone a dramatic 1,000 percent increase in secondary enrolments and this created:

... demands for the extension of higher education to more people. In particular, the growing middle classes were demanding greater access to university education. (Gutek, 2006, p. 311)

In the last half century, higher education attendance rates have increased from 1% to 26.2% of the 19-23 male/female age groups (Brunner et al., 2008). Additionally, since the 1980s, Mexico has registered an increasing number of students in private universities, many of which have been considered institutions with low standards and poor quality, and are named "*universidades patito*" ("stress-free" universities). Estimates suggest that over a thousand institutions of higher education represent 62.3% of the total number of institutions and about a third of the total national enrolments (Aviles, 2007). See table 4.

Table 4. *Number of Higher Education Institutions, Students and Faculty, 1980-2010.*

Scholar year	Total	Faculty	Universities
1980/1981	935 789	73 789	892
1990/1991	1 143 040	122 230	1 662
2000/2001	1 846 964	191 326	3 394
2008/2009	2 573 427	275 806	5 073
2009-2010	2 743 272	N/A	5 749

Modified from Instituto Nacional de Estadística y Geografía (2011). Cuadro 4.26 and SEP (2010-2011).

Despite the unprecedented explosion in the number and types of institutions (private/public), students and faculty members, Brunner et, al.'s (2006) report for OECD states that "Mexico's human capital, measured by years of schooling is one of the lowest in the OECD area and the educational system is generally agreed not to be performing well enough" (p. 14). The context of higher education in Mexico is complex. On the one hand, there is the creation of a highly differentiated postsecondary system, characterized by a small number of elite universities like the IPN with highly competitive admissions. On the other hand, the reduction of the number of highly competitive institutions is affected by an expanding range of *universidades patito* that are more accessible to the majority of the population (Stromquist & Monkman, 2000, p. 14). The growth in enrolment of higher education continues in a time characterized by tight budgets, an expanding school age population, cultural diversity, cross border migration, and poverty. If gender equity has increased in institutions of higher education in Mexico, it is also subject to the problems of access to a quality education experienced by the general population.

Conclusion

Globalization permeates not only the relationships between nations but the establishment of policies and the lives of individuals in developed and developing countries. External forces (e. g., transnational corporations, G8) play a paramount role in the direction and goals of many countries. Still, each nation has to grapple with the impacts of globalization within a local context. Mexico is no exception. It is a large and diverse country and has responded to pressures of globalization in particular ways.

In adopting gender policies emanating from the west, education has either overlooked or oversimplified the problems women in Mexico or other developing countries face as students. Traditional approaches to the study of women overlook the diversity of women's participation, emphasizing only the study of women as a homogeneous category worldwide.

Postcolonial feminist theory provides generative lenses to understanding the implications and practices of the gender equity policies in a diverse country such as Mexico. This theory facilitates the understanding of the colonial and social construction of males and females and frames the dynamics of gender, resistance, policies, and equity in geographical spaces. Postcolonial feminist theory also locates women in historical and geopolitical space and time providing adequate lenses to recognize the complexities of social differences amongst students sharing similar gendered experiences.

Gender equity policies are immersed in a context that takes place locally. At the same time, as with education, gender equity is influenced by national and international forces of globalization. Globalization drives a contradictory process in terms of the economy and international relations. It also sets the basis for speaking about gender equity and demonstrates the range of factors, variables, forces and constraints associated with

gender inequality (Fennell & Arnot, 2008) within the governments (i.e. Mexico) and institutions (i.e. IPN) in developing countries.

In the next Chapter, I review literature on gender equity in the context of developing higher educational programs that have been historically dominated by males. I discuss how access to education does not equate with gender equity in these institutions and further elaborate on the context of higher education in a developing nation, Mexico.

CHAPTER 3: LITERATURE REVIEW

This chapter synthesizes research on gender equity in higher education generally, and, more specifically, in male-dominated programs in the ‘developing world’ context. This chapter addresses how access has played a paramount role in international agencies and the goal of universities worldwide. It also describes sex-disaggregated access in higher education and the current challenges of universities. In addition, this Chapter reviews the need for going beyond access by taking into account the western and postcolonial state of research that describes how access is just one part in the advancement of gender equity. At the end of this Chapter, I also report on the state of higher education in Mexico.

Background: ‘Access’ as the Dominant Trope in Higher Education

In a neoliberal environment, the international community through the UN has accepted and adopted agreements to make education universally available for *both* males and females. The so called “community” supportive of such agreements embraces representatives from at least 200 nations of the UN in which representatives of richer nations (G8) have a stronger voice and major influence over developing countries.

Education, across all levels, is framed as leading the way to a stronger economy, increasing the standard of living, opening new opportunities, and producing skilled and rational-thinking people. As Meek et al. (2009) emphasize, high-level knowledge is fundamental to the current era:

This era has offered great hope, and certainly ground-breaking developments have occurred, often due to the pervasive forces of new communication and information technologies. As a result, all countries, whatever their level of development, have been obliged to review and reorganize their capacities for accessing and benefiting from the high-level knowledge which shapes social change. (Meek, Teichler, & Kearney, 2009, p. 8)

The apparent utility of education stimulates the desire for higher levels of education. Thus, by widening participation, higher education has become an international, national and personal goal. Advancing this trend, international organizations like the World Bank (2005), UNESCO (1998), and OECD uphold higher education as a central institution to facilitate the skills that are essential to economic and social development. In addition, the final report of the 1998 World Conference on Higher Education in Paris (UNESCO, 1998) confirms the importance of facilitating access and improving equality of access.

Through the Millennium Development Goals (MDG), the world's countries and leading development institutions have been working to meet the multiple needs of the world's poorest, by focusing on a range of initiatives from halving poverty to halting the spread of AIDS by 2015. Included in these goals is the promotion of access to education. One of the goals of the MDG frames the need for numerical results to assess the progress of access and gender equity in education worldwide. Considering that access and gender equity are critical conditions to demonstrate global progress, the UNESCO Institute for Statistics (UIS) conducted an analysis of sex-disaggregated education to provide insight on the overall progress for its achievement. Universities, then, are encouraged to meet access and equality for both women and men as a crucial component of a modernising system. This change has been noticed in the last few decades with enrolment levels often exceeding 50 percent of women attending higher education in many countries (Ansell, 2008).

The UIS collected data worldwide on: access, completion and fields of study from elementary to university levels. Table 5 shows the gender enrolment ratios between 1995 and 2007 at the primary level. According to this table, various countries in Central and Eastern Europe, Central Asia, Latin America, the Caribbean and North America have moved from a position of disparity between boys and girls to an almost parity by 2007.

However, work remains to be done in certain Arab states that still have far lower percentage of girls enrolled.

Table: 5. *Gender Enrolment Ratios (GER) and Gender Parity Index (GPI) at the Primary Level of Education.*

Region	Primary GER (males) %			Primary GER (females) %			GPI, Primary GER		
	1995	2000	2007	1995	2000	2007	1995	2000	2007
Arab States	95.5	94.3	99.6	79.2	83.5	90.8	.83	.89	.91
Central and Eastern Europe	106.8	104	99.2	104.1	100	97	.97	.96	.98
Central Asia	85.2	99	100.6	85.8	98.1	98.7	1.01	.99	.98
East Asia and the Pacific	n/d	n/d	111.2	n/d	n/d	112	n/d	n/d	1.01
Latin America and the Caribbean	141.7	122.6	118.9	140.7	119	115	.99	.97	.97
North America and Western Europe	104.3	102.6	101.6	103.3	101.5	101.3	.99	.99	.99
South and West Asia	101.6	98.5	110.4	80.7	83	106.1	.8	.84	.96
Sub-Saharan Africa	81.7	88.7	103	68.3	75.3	93.3	.84	.85	.91

m=missing

Source: UNESCO (2009)

The UIS also studied the achievements of gender enrolment in higher education.

Figure 7 below shows that while there were some inconsistencies in East Asia and the Pacific in 2000, gender parity was almost attained by 2007 in various countries of South and West Asia. Meanwhile, some regions such as the Arab States and Sub-Saharan Africa do not report tertiary data. The information provided by Central Asia, Europe, Latin

America and the Caribbean, and North America show that females are more likely to be enrolled in tertiary education than males.

According to tables 5 and 6, there have been significant changes in terms of access for women and men at various levels of education worldwide. Nevertheless, the UN (2010) states that despite the large enrolment ratios in primary and upper levels, disparities remain high at the university-level of education, mainly in certain developing regions like sub-Saharan Africa and Southern Asia, in those regions for UNESCO (2009) did not report any information. Even when undeniable progress has been made in terms of women's and girls' access in most of the regions of the world, the particular fields in which women are enrolling and the quality of their education remain obscure.

Table: 6. *Gender Enrolment Ratios (GER) and Gender Parity Index (GPI) at the Tertiary Level of Education.*

Region	Tertiary GER (males) %			Tertiary GER (females) %			GPI, Tertiary GER		
	1995	2000	2007	1995	2000	2007	1995	2000	2007
Arab States	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d
Central and Eastern Europe	n/d	42	55.4	n/d	50.7	69.8	n/d	1.21	1.26
Central Asia	27.2	21.4	24.7	30.1	20.2	27.2	1.1	.94	1.1
East Asia and Pacific	n/d	16.6	24.2	n/d	12.7	24.1	n/d	.77	.99
Latin America and the Caribbean	n/d	20.9	31.3	n/d	24.7	38.9	n/d	1.18	1.16
North America and Western Europe	54.7	53.6	n/d	64.5	68.2	n/d	1.18	1.27	n/d

South and West Asia	n/d	10.2	14.3	n/d	6.8	10.6	n/d	.67	.74
Sub-Saharan África	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d

m= missing

Source: UNESCO (2009)

The case of Latin America is complex in terms of motivation for higher education.

While statistics demonstrate that more women than men attend university (UNESCO, 2009), the motivation to participate at this level may not be for the sake and goals of social progress or equity. Stromquist (2007) suggests that women in Latin America participate in higher education only to acquire the credentials needed to participate as part-time workers in the labour force; without these credentials, their chances to find a job are reduced.

Stromquist adds that in contrast, many men are hired in the construction, transportation, and security forces without the need of any credentials.

Although universities are framed as institutions of progress and development, they do not have an easy task. Along with the challenges of access and equality, they are under pressure to satisfy the needs of the changing society and the global economy by meeting the needs of both employers and students. These initiatives in improving access, equality and quality have often produced inconsistent results given limited budgets and extensive enrolments (of women and men).

Beyond Access

While there have been some undeniable gains in terms of access in higher education, less emphasis has been placed on the qualitative experiences of students. Stromquist (2007) observes that:

Education participation statistics are easier to collect than are changes in perceptions and practices regarding the roles and possibilities of women and men in society. Educational access and attainment alone do not indicate that

gender problems no longer exist; in most societies, one can still document an asymmetrical distribution of political and economic power. (p. 36)

Indeed, some women continue to face considerable resistance from men in powerful positions (Blackmore, 1997). That is, despite the access of women into higher education, attention has to be paid to the quality of education and the type of access in terms of gender equity.

Research on gender equity has been mainly produced in the UK, USA, Germany, Canada, Australia, and New Zealand and these studies inform the global position in the establishment of policies (i. e. Mahony, 1985; Rosser, 2006; Spender, 1993; Subirats & Brullet, 1999). In developing countries, gender equity in higher education remains a novel topic. Gender is usually only a factor in relation to quantitative studies and gender-disaggregated statistics with few qualitative studies having been conducted. Interestingly, Henry (2001) suggests that quantitative research suggests the massive access of women which allows the state to evade the responsibility of addressing real gender reforms that have been also ratified in international treaties (i.e. MDG). As a result, one may think that quantitative reports may be the requirements that these developing countries have to submit in order to qualify for future loans, instead of a real government engagement towards gender equity. In other words, institutions meet numeric requirements to qualify for funding without making substantial social and cultural changes to the practice of gender equity.

Western Research

Studies about North American and European women dominate the literature on gender equity in higher education. In these studies, higher education has been characterized with gender inequity, as well as the perpetuation of discrimination and injustice towards women in western countries (Acker, 1984). Western feminism has been crucial in framing

gender through questions of power, the subjugation of women, gender inequities (Elliot & Mandell, 1998; Comack, 1999; Andersen & Taylor, 2006) and at the same time, promoting equitable human relations.

Beyond promoting educational access for women, research has also provided insights into females' experiences in schooling bringing to light such inequities as inferior funding for women (Rosser, 2006); isolation from mentors (Dingel, 2006); less access to resources such as space and equipment (Sonnert & Holton, 1996); and violence in secondary schools (Acker, 1994; Spender, 1993), higher education (Lee, 1998) and in male-dominated programs (Dingel, 2006). A number of studies have also identified the challenge of finding space for women's 'culture' in higher education (Acker, 1992).

Research indicates that female students perceive themselves as unwelcome in traditionally male-dominated fields (including administration) (Acker & Armenti, 2004; Barata et al, 2005; Dalley-Trim, 2007; Jackson, 2002), under what has been labelled the "chilly climate" (Hall & Sandler, 1982). Feminists define the concept of climate as a pervasive and systemic institutional order, which makes reference to a compounding of everyday subtle practices that can block women's full participation in universities (Prentice, 2000). For example, researchers focus on women's sexual harassment, discrimination and stereotypes, and the relationship between women and men in terms of jokes, gaze, sexual insinuation, and ragging (Gordon, Holland, & Lahelma, 2000).

Interactions amongst students has also been documented in terms of desktop and toilet graffiti that produce coercive display of objectifying women (Mills, 2001), wolf-whistling in the streets and assaults (Connell, 1995) and power-control demonstrated through a bodily domination in a male public space such as schools (Mills, 2001). These occurrences and practices may appear trivial, subtle and difficult to capture, but they reveal

the ways in which competition and domination are played out among males and females in education.

Moreover, even when education has proven to have the potential to transform gender and sexual relations (Kessler, Ashenden, Connell, & Dowsett, 1985), it is just as capable of creating barriers and obstacles. Findings have demonstrated some steps towards attaining gender equity and the remaining concerns. For example, Powell, Bagilhole and Dainty (2007) explored how some women experienced engineering in higher education in England and the factors that may hinder women's advancement in the professions. They found that women were more satisfied with the program than men because these women were reflecting their assimilation to the engineering culture, which at the same time reinforced the dominant masculine engineering culture, instead of challenging it. Researchers show that women's experiences varied in good, to bad, to ugly. Their findings offer a range of somewhat contradictory views. For example, good experiences are explained by peer camaraderie, staff support and the industrial placement. The bad experiences have been related to structural aspects of higher education (such as teaching and learning methods). The ugly experience was described as people's negative attitudes towards women in this field (Powell, Bagilhole & Dainty, 2007).

In response to these studies, policies have been established for promoting equitable treatment for women and men; nevertheless, women still face symbolic penalties such as lack of recognition (Stromquist, 2005) that permeate their academic performance. In addition to the academic, male-centred world that dominates Science and Engineering (SE), these studies frame men as granted a greater "margin of error" in their courses because they are legitimate and seen as the authority in the science fields. Few disappointing performances do not risk men's attendance or personal stability. On the other hand, women

have to work harder to the point of perfection. Although this may push women to achieve good grades, women may expend unnecessary time engaging in activities such as some extra study sessions that are not necessarily productive for their academic goals (Dingel, 2006).

In terms of supervision, Lee (1998) investigated how hard it is to find and define the limits and differences between friendship and harassment. In her findings, she described how physical touching is not necessary to make one feel harassed; it may only take a look or a sentence to provoke anxiety in the student. These situations affected the quality of female students schooling and, thus, their ability to reach their educational potential and career goals (Lee, 1998; Robinson, 1992).

MacLachlan (2006) interviewed 63 women who had completed a graduate program in a Science and Engineering program. The findings suggest that in their previous experience as graduate students, their professors were often unaware of how they treated their female students differently simply because they were females. These female participants found this differential treatment to be sometimes positive and sometimes negative. For example, some women complained that an older white male faculty member likened them to a daughter; but one participant was happy with this account.

Rosser (2006) investigated the institutional barriers that prevented women from attaining their goal in the fields of science and engineering. She interviewed four hundred women, the majority of whom attended major research universities such as MIT. In her study, she found that despite what participants described as active actions to recruit them into the programs (access), time management, isolation, lack of mentoring, discrimination, sexual harassment and credibility/respectability from peers and administrators often played a distinctive role in their education life (Rosser, 2006). Women in this study had to

negotiate their way through education by dealing with the pressure of the unwelcoming environment and the usual academic demands to achieve their goals.

Mattis (2007) and MacLachlan (2006) recognize that the number of women accessing SE fields is still low and described how this low enrolment intensifies the perceptions of being rejected or highly noticed. Mattis found that young women in the SE field were constantly rejected basically because these institutions principally enroll male students principally. “Girls’ perceptions that engineering is not for girls is not just a perception: it is a reality in terms of the low representation of women in the engineering workforce” (Mattis, 2007, p. 359). Additionally, MacLachlan (2006) found that women observed that men switched their behaviour when they joined male’s gatherings in the laboratory or the hallway, making women feel unwelcomed.

Since the low number of women in SE programs has received special attention, some initiatives have been implemented principally in western countries. Rosser (2006) described how the National Science Foundation established an awards program known as ADVANCE to attract and retain women in the SE department in USA. The program supports institutional and individuals’ efforts to empower women to participate fully in this field. DiMaria (2010) argues that attention has to be paid not only to enrolment but to a shift in retention. In her interviews, she found that initiatives are being taken up in institutes such as the Rochester Institute of Technology, where the Pathways Project works to retain women with satisfactory results.

Roach (2006) talked about the initiatives taking place to transform higher education’s culture and policies for women in science and engineering. He described how the National Science Foundation has awarded to Rice University a grant to increase opportunities for the hiring and advancement of women faculty. In Canada, the University of Calgary, the

University of Alberta, the University of Victoria and the University of Western Ontario, to name a few, have special groups to empower and encourage current and potential female students to the SE field.

In addition to the access and the academic environment, Rosser (2006) found that women faced pressure balancing career and family. Although they were skilled enough for the program, they found powerful contradictory messages about the devaluation of mothering and the presentation of child-care as a woman's lifework. Motherhood became difficult because it was also related to a lack of success and the achievement of womanhood. Brisking (1991, p. 2) states the following about motherhood and schooling:

This complex presentation of mothering creates a dilemma for girls about where to situate schooling in their future. The common sense appreciation of mothering assumes it is 'natural' for women, and that schooling in mother work is not deemed necessary. For girls to commit themselves to schooling is at some level to repudiate themselves as women.

Schooling becomes a difficult decision for women who also wish to have families. Women may contemplate their options as either schooling or mothering, without a clear idea of how to do both.

Still, some women envision negotiating family with school. Luke (2001) suggests that once a PhD program is finished, graduates want to start their first academic job in the field; nevertheless, this time usually overlaps with women's biological window to start a family. In this context, women may find part-time work more attractive because of the intensive tasks of rearing young children. Other PhD students may work part time in order to combine their school with their family. As a result, women tend to have more career interruptions than male academics because of family responsibilities.

Western research has also looked at the experiences of female professors in higher education. Dominant public discourses often construct the field of SE in masculine terms, constituting the field as being more appropriate for men than for women (Lynch & Nowosenetz, 2009; Harding, 1991; Rosser, 2006; Acker & Armenti, 2004). This places male professors in a better position over female professors.

The spatial and temporal arrangements of work, principles of management, job evaluation processes, and the value placed by work organizations on instrumental versus nurturing tasks, as well as opportunities for advancement that arise as a result of access to social networks and upwardly mobile job ladders, continue to advantage men on average more than women. (Acker, 1992, p. 255)

Currie, Thiele and Harris (2002) note that the most valued activities in universities are those that reflect male patterns of socialization, individualist rather than collective, competitive rather than cooperative, based on power differentials rather than on egalitarian principles, and are linked to expert authority rather than to support. In other words, the environment in these institutions may not welcome or support females or female characteristics either as staff or students.

The devaluation of women has become normalised in the social relations of the academy. For example, although the number of women students in higher education is increasing (Jacobs, 1996; UNESCO, 2009), studies have found that their intellectual capital is worth less in the job market. As staff members, women in higher education carry the burden of “gender” manifested in lower pay for equivalent work, poorer working conditions and greater instability of employment, institutional sexism, overt and covert discrimination, bullying and harassment (Howie & Tauchert, 2001).

Women teachers and professors can commonly be found in the basic levels of education, while their numbers decrease in upper levels. In upper levels, there are consistent differences because the few female professors have outnumbered men in junior, untenured, and part-time positions (Luke, 2001). Currie, et al. (2002) explain in *Gendered Universities in Globalized Economies: Power, Careers and Sacrifices*:

The problem is first of all structural. For women to meet the criteria of a 60 hour week to have a significant research reputation established, it means essentially they have to give up a commitment to a family and a personal life or make a series of compromises which delay their advancement to senior positions ... (2002, p. 80)

Currie, et al. (2002) imply that women must compromise their career aspirations or their family life because of the structural expectations of advancing in their work.

A range of studies illustrate the kinds of challenges women face and even that gender equity has improved along certain dimensions in certain local contexts. But generally, women in higher education tend to experience gender discrimination, difficult decisions between going to school and raising a family, harassment, and even situations that encourage women to achieve highly in their programs. These studies suggest that women's experiences of equity in higher education are contrasting and, at times, in conflict with one another. In other words, despite the access of women to higher education, inequities and challenges remain as women and initiatives attempt to redefine the roles assigned to women by society and to fulfil their will to succeed.

Postcolonial Studies

Western research has been valuable in naming and working against sexual harassment (e.g., Lee, 1998) and for highlighting the lack of professional esteem for women. While identifying the experiences of participants in education, scholars have focused mainly on

the gender-differentiated experiences of white, middle-class, North American and European women (Harding, 1991, 1998). However, access policies have increased the participation of an increasing number of diverse women in the academy; these women do not necessarily belong to the dominant group. Considering that understanding of gender requires attention to class and race (Ng, 2005), we can assume that not every woman has the same opportunities to learn and achieve well.

While espousing lofty Western discourse of equal access and opportunity to education for both boys and girls, few universities have analysed their own practices of reproducing inequalities and forms of discrimination among participants from diverse backgrounds (Morley, 2005). Without this analysis, one can expect that academia maintains its gendered power relations through every day practices through say stereotypical assumptions about students (Morley, 2000). These daily practices condition and shape experiences for students that in turn shape their performance, achievement and future career goals (Collins, Kenway & McLeod, 2000; Robinson, 1992).

Cooper (2002) explored the current efforts to change the situation of women in higher education and the gender equity issues intersecting with colour and sexuality among students and faculty members. She stated that in terms of numbers, parity for students in many universities had almost been achieved through affirmative action initiatives and awareness. In her study, Cooper found that despite access, women described a chilly climate and the pressure from family responsibilities. Cooper (2002) also found that women of color and lesbians suffered from racial or sexist discrimination.

Although the culture of science was historically, and is currently, a male culture that is often hostile to women and minorities (Harding, 1986; Dingel, 2006; Hanson, 2006), Hanson (2006) finds considerable access to science (courses) among young African

American women in the United States. Hanson concludes how, in contrast to White women's experience, African American women in the study described ways in which gender is constructed in this community with characteristics of high self-esteem, independence, and assertiveness, as well as high educational and occupational expectations. These are a unique set of resources for African American women that may be important for generating interest and success in science.

Morley (2007) explored the extent to which gender equity was promoted and impeded in universities in South Africa, Sri Lanka, Nigeria, Tanzania and Uganda. The findings suggest that for many women, entry into higher education can be a means of challenging gender oppression (e. g., encouraging social mobility, independence). This situation is also accompanied by a range of gendered processes and discriminatory practices and exclusions that are hidden within daily life encounters within higher education. For Morley, change in patriarchal values and relationships is required in these countries.

Delgado Bernal (1998) describes the situation of Chicana female students in higher education in terms of race and class. She suggests that the women in her study had different experiences from the middle/upper, white colleagues. The fact that many women suffer from sexist discrimination, as western research suggests, does not create a common connection amongst all women (Delgado Bernal, 1998), because the life experiences of Chicanas are significantly different from men or white women. Delgado Bernal also introduces the concept of "cultural intuition" to name a complex process that recognizes the viewpoint of Chicana scholars informed by four sources: personal experience (collective experience and community memory), existing literature on a topic, professional experience, and the analytical research process itself. Additionally, Delgado Bernal (1998) focused on

the study of Chicana women in higher education. She found that Chicanas face a triple oppression of race, class and gender within the university.

The experiences of African PhD women students in the field of sciences in European and North American universities were described by Beoku-Betts (2006). She found that white professors showed doubts about the abilities of African women to be able to do the work, and conveyed feelings of exclusion, lack of support, and negative perceptions of African societies. These women were constantly reminded of their Third World status; both race and gender situate them in less powerful positions than their male or white counterparts in their scientific knowledge and living experiences. Beoku-Betts adds that some participants relied on self-motivation or support from other students.

Margolis and Romero (1998) examined the effect of the hidden curriculum on women of color in a graduate program. They found that the program produces professional sociologists with gender inequalities. They also examined other forms of inequalities for these particular participants. Women of color described stereotyping and blaming the victim as problems. Margolis and Romero encourage the recognition of and response to the hidden curriculum in college and graduate school if universities want to support diversity.

Understanding the experience of underrepresented groups is vital for supporting equity, but it is also vital to questioning the culture of the dominant group that might be threatened by diversity.

Equally important is the goal of addressing the preconceptions and unconscious images held by those members of a profession whose social identities are well represented. It is easier to understand why this second goal is as important as the first if we take group psychodynamics seriously. (Burak & Franks, 2006, p. 99-100)

In other words, the integrity and privileges of the group may be considered at risk and reaction towards any “threat” may be expected. Initiatives should respond to the kinds of needs that are constantly identified within particular groups. Research reports that there are people who are usually unable to notice their own privileges in terms of institutional structures and the spaces they occupy in academia and society.

Burak and Franks (2006, p.103) report that a member of the ruling group stated: “we do not have a special lounge (or program, or scholarship) for whites (or men), so why should they get one?” The group that represents the “norm” is not able to recognize their (privileged) position and the needs of the “new” coming group in order to achieve their goals. For example, “those with social capital are often able to decode and access new educational opportunities. Those without it can remain untouched by initiatives to facilitate their entry into the privileges that higher education can offer” (Morley & Lugg, 2009, p. 37).

In terms of the practice of policies, O’Connor (2008) found that higher education structures fail to be realigned to support gender policies. He analyzed policies related to education and found that the state, through its own policies related to higher education, reinforced barriers and patterns ‘erected’ by masculine ideas. O’Connor added that even in the institutions where there is recognition of gender policies, no mechanisms integrate a gender perspective into educational planning. In other words, despite the establishment of gender policies, administrators, professors, and supervisors do not typically consider explicitly addressing gender or promoting gender equity in their curriculum (Stromquist, 2003). At the institutional level, Shackleton, Riordan and Simonis (2006) studied the initiatives aimed at achieving greater gender equity in a South African engineering

program. They found that little effort was provided for developmental programmes for the staff that might have affected a change in the gender climate of the institution.

In Mexico, research demonstrates something similar to what O'Connor (2008) described. Palomar Vereá (2004) studied institutions of higher education in Mexico. First, she found that there are a few institutions that have established programs to study gender. In addition, she found that the administrators of institutions with programs for the study of gender assume that they are implementing gender initiatives with such programs, without any extra effort needed to achieve gender equity through programs for the staff or the students (Palomar Vereá, 2004).

Soudien and Corneilse (2000) argue that as programs are installed top-down in terms of the criteria of coherence, locals can still jeopardize the momentum of the new hegemonic discourse.

While the debate was being conducted within the framework of program renewal, the participants showed how hegemonic discursive thrusts (top down policies in management language) take place in fields that are inhabited by already existing disputes and new disputes. The point is that while new terms of engagement (new regimens of power are installed to oversee the process of programmatization or new panoptica are devised) are being established, existing and/or new social projects continue to operate within the social space framed by the dominant discourse, which not only delays the progress of the intervention, but also unsettles it. (Soudien & Corneilse, 2000, p. 310)

The establishment of gender policies and/or initiatives takes place in an already inhabited male centred field. The top down process works only to the point where it provides contact for the individuals and their disputes.

Postcolonial feminist research contributes to the study of women by highlighting that women are a diverse collection of individuals shaped by diverse social markers (e.g., race, class) that provide them with different experiences and needs (Delgado Bernal, 1998; Hanson, 2006). Their different experiences influence their levels of educational access and achievement. Gender policies have helped in broadening access to more diverse participants in educational institutions. Gains are significant in many nations, particularly in those countries that have established special programs beyond access policy. For example, a change in culture, the enactment of development programs, and greater gender awareness in the institutions of higher education are also crucial.

Mexico

Although I tried to locate research on women in SE in Mexico, I could not find much. However, I describe a few quantitative studies based on the higher education Mexican context. More women are now currently enrolled in higher education than in the past, albeit women are still disproportionately participating in the so-called feminine programs (Bustos Romero, 2003). In other words, gender disparity remains a critical concern in the composition of the students in programs in higher education. Admittedly, there are shifts with the presence of women in male-dominated programs and with the presence of men in traditional female programs. Nevertheless, beyond the increased representation of women in higher education, there is still a striking difference in relation to the areas they occupy and the status accorded to those spheres (Moss, 2006).

Indeed, there has been a greater participation of women in higher education in Mexico mainly in the last 40 years. The number of private institutions of dubious quality in the decade of 1990-2000 increased from 464 to 1,366.9, while the number of public

universities changed from 774 to 1,081 by 2002 (Aboites, 2003). However, public universities expanded their capacity in existing public institutions and programs available to support graduate studies (through CONACyT) and also contributed to the incorporation of more students into the undergraduate and the graduate levels throughout the country. According to SEP (2003), the number of male students increased by 36.6% from 1990 to 2001 while the number of female students increased by 87.9 % in the same years.

Statistics also show even larger variations in graduate programs, where women begin to fall behind in Master's and PhD programs (Bustos Romero, 2003). Sánchez (2003) argues that there are two main factors that restrain women from accessing higher education or graduate programs: 1) the patriarchal culture conditions women to be aware of what is considered "feminine" (passivity, submission, and child care); and 2) graduate studies coincide with the optimum time to give birth to children. Often, women have to choose between raising children and further studies.

Covadonga Cuetara (2001) studied demographic and social development data to analyze Mexican higher education and the professional situation of female graduates. He demonstrates that the apparent progress in the enrolment of women and men in higher education is the result of demographic dynamics more than the result of education policy intended to promote "affirmative action". According to him, there is still much need to reform or incorporate policies in favour of women. His data also reveal the disadvantages women face in the higher educational level in a social order of male predominance.

Conclusion

Even where numbers demonstrate parity between women and men, access is still problematic in certain regions of the world and fields of study. In addition, the quest for gender equality remains a challenge in terms of these academic environments that are

embedded in longer cultures of traditions and customs. Western-based research suggests gender discrimination operates along a number of registers: the lack of recognition women receive for their work; the demand to work harder; sexual harassment; motherhood; and being a highly visible minority in the male-dominated programs. Postcolonial approaches highlight the need to consider race, class and sexual preferences along with gender discrimination in the study of women in higher education along with gender discrimination.

Research in the context of developing countries highlights how gender is constructed locally and ways in which the top-down approach can be challenged at the local level as well. In Mexico little research is available to this end, but Bustos Romero (2003) finds that there have been some changes in the access of women to higher education.

To take gender equity seriously in schooling requires attention to diversity, access, treatment, and an examination of content, staff and students. It implies the inclusion of interventions necessary for females and males to achieve equal access to educational opportunities and personal growth in schools (Koch, Irby & Brown, 2002).

The next Chapter discusses the use of case study. In addition, it describes the methodology, data collection, the site, and participants' profiles.

CHAPTER 4: METHODOLOGY

In this chapter I describe the research methodology used for examining how gender equity policies are enacted and experienced by participants at the Centre of Technology (CT) (pseudonym), a higher education institution in Mexico. First, I discuss the feminist framework undergirding my case study methodology. I then discuss the case study approach, its applicability and its limitations. Next, I describe my position as a researcher and the site selection. I then outline the overall design of the study and make reference to the research ethics of the study in relation to 18 participants. Finally, I discuss the data analysis approach.

Feminist Research

All empirical research, including case studies, has a story to tell (Yin, 2009, p. 130). This study uses the stories of the participants at the CT to describe and analyze how gender equity policies are enacted and experienced (Olesen, 2003). Feminist research aims to “bring women in”, that is, it tries to find what has been ignored, censored, and suppressed, and to reveal both the diversity of actual women’s lives and the ideological mechanisms that have made so many of those lives invisible” (de Vault, 1999, p. 30).

Feminist research also seeks to describe and make sense of participants’ stories in their particular contexts; contexts where colonial and neo-colonial domination have destroyed local cultures, negated the historicity and humanity of the local people, and imposed foreign cultures (Serequeberhan, 1994, p. 58). Olesen (2003) suggests to avoid negating the historicity of the local people, it is important to contextualize the project in time and place in the study of women’s lives. “It is, therefore, appropriate to try to locate feminist qualitative research in the many contexts that shape this enterprise and that it in turn shapes” (p. 367).

By taking a feminist perspective, this study seeks to both: a) support research that leads to social change and action beneficial to women and minorities; b) minimize harm and control to the participants in the process (de Vault, 1999). Although I am aware that the concern with social change is shared by other critical traditions, feminist research focuses on changing the lives of women and/or the systems of control that also dominate other minoritized groups. This research, therefore, takes a critical perspective in trying to understand the institution, the participants and the policies that impact upon women's lives. In addition, beyond examining the theoretical, policy or action frameworks, feminist research "can present new ideas generated in the research for destabilizing knowledges about oppressive situations for women, or for action or further research" (Olesen, 2003, p. 333). This study examined both the policy framework and the grounded experiences of women and men working with and against the desire for a more equitable environment at the CT.

Methodology: Case Study

My study employs a case study method to forge an investigation into how gender equity policy is manifested on the ground at the CT. Stake (1995) describes case study as:

The real business of case study/purposeful sample is particularization. We take a particular case and come to know it well, not primarily as to how it is different from others, but what it is, and what it does (p. 8).

The single instance of a case consists of a conceptually bounded system, for example a child, a class, a school, a community (Cohen, Manion & Morrison, 2007). I define my specific, complex, functioning unit (Stake, 1995) as the CT (pseudonym) of the IPN. The CT has been confronted with policies that come from international and national organizations and settings that inform the institution's local policy environment. By

singularly examining the gender equity environment of the CT of the National Polytechnic Institution, my focus of study is this temporal and contextual setting in Mexico (Yin, 2009). Yin (1994) adds that case studies are preferred when the researchers have little control over events and when the focus is on a contemporary phenomenon in real-life context as is the case of this study. At the same time, the case examined how the implemented gender equity strategies succeeded or failed in the site within a temporal and geographical parameter (Cohen, Manion & Morrison, 2007).

By concentrating on a single case, this project is able to uncover the interaction of significant factors of the phenomenon with a holistic description and explanation of the site and its participants (Merriam, 1998). Since the interest of a case study is “in process rather than outcomes, in context rather than a specific variable, in discovery rather than confirmation” (Merriam, 1998, p. 19), I paid particular attention to the people who attended gender workshops, and to the people who tried to talk to me in the CT. I interviewed participants in order to learn how gender equity is discussed by the people who interact at the CT. In addition, as a visitor, I observed the physical environment of the CT during my visits.

The institution for this study is rich and distinctive because it is a leading research university in science and technology, according to the CONACyT rating. Merriam (1998) says that a case might be selected for its uniqueness and for what it can reveal of a phenomenon. The CT is special because even though it is a university for the study of technology and engineering, it promotes gender equity based on the *General Policy for the Access of Women to a Life Without Violence* and *Human rights for women* among other policies described in the next Chapter. Palomar Verea (2004) states that in Mexico,

institutions are free to promote or not promote gender equity; this institution, however, is one of the few that chooses to do so.

I also used case study research design for this study because it is the preferred method used in the social sciences when (a) "how" or "why" questions are being posed (Yin, 1994). In this study, I try to understand how gender equity policies are implemented and explained on the ground. Case study methodology aligns well with the aims of my study because it can illuminate the complexities of human interaction and reveal how gender equity policies were viewed, considered, contested, lived, and potentially implemented by the informants.

Many studies provide statistics that show the restricted number of women and the over representation of men in these SE departments (ANUIES, 2006-2007; Bustos, 2003). However, little is known of the qualities of their participation and their perceptions as (gendered) individuals (Stromquist, 2007). Case studies illuminated such complexities by offering intensive descriptions and analyses of a single unit or bounded system (Hancock & Algozzine, 2006). Also, by using case study methodology, I gained a deeper understanding of the perceptions and meanings derived from these perceptions by professors, students and administrators.

Reinharz (1992) adds that feminist case studies “illustrate an idea, to explain the process of development over time, to show the limits of generalizations, to explore uncharted issues by starting with a limited case, and to pose provocative questions” (p. 167). My aim is not to generalize the participation of the informants but “to illuminate the particular situation, to get a close (i.e., in-depth and firsthand) understanding of it” (Yin, 2006, p. 112). Because I am interested in a rich description of relevant gender equity environment and the experiences of the participants of the CT, case study seemed to be an appropriate research methodology to employ.

Limitations of Case Study Methodology

I played multiple roles in this study: researcher, data collector, analyzer and transcriber, among others. It is highly possible that I missed important features during my multiple roles. In addition, while the main focus of this study is on gender in higher education in Mexico, the library search for literature on this topic revealed very little empirical research. For this reason, I had to use findings from studies in other developing countries in Latin America and Africa, and other countries of the West where more research was available as the background for this study.

Although case study methodology seems appropriate when analyzing how the participants of the CT experienced and translated the gender equity policies, one should also consider the weaknesses of case studies pointed out by Cohen et al. (2007, p. 256):

- The results may not be generalizable except where other readers/researchers see their application.
- The results of case studies are not easily open to cross-checking, hence they may be selective, biased, personal and subjective.
- Case studies are prone to problems of observer bias, despite attempts made to address reflexivity.

In some sense, these limitations are inherent to case study and are without ‘solutions.’ My study is also limited by these weaknesses in methodology. Nevertheless, I illustrate how these limitations can be less limiting through methodological vigilance.

First, the purpose of this study, in reiteration, is not to generalize the findings, but to provide a thick description of the case. This case study is rich and special because the IPN is one of the few Mexican higher education institutions (Palomar Vereá, 2004) that has

established and promoted gender equity based on national and international policies; so generalization is not a motivating objective. Further, where challenges or obstacles are made visible in this case study, it is likely that other institutions with even less official commitment to equity may well have much to learn from this case.

Second, this study collected information at a certain time and place based on the experiences of the participants. Thus, it reflects the picture of the actors of that place and time. Allison and Zelikow (1999) assert that:

The glasses one wears magnify one set of factors rather than another in ways that have multifarious consequences. Not only do lenses lead analysts to produce different explanations of problems that appear, in their summary questions, to be the same. Lenses also influence the character of the analyst's puzzle, the evidence assumed to be relevant, the concepts used in examining the evidence and what is taken to be an explanation... In offering his explanation, each analyst emphasizes what he judges relevant and important, and different conceptual lenses lead analysts to different judgments about what is relevant and important. (p. 388-89)

Since my lenses influence the result of my research, I make my position clear in the next section. By exposing my position, I attempt to minimize the biases of my study (Harding, 1987). Fourth, I aimed to partially address issues of biased reporting by cross-checking my interpretations with two of my advisors. First, I analyzed my data, then, I provided my point of view, then, I discussed it with my committee.

Case studies have another limitation of containing a large amount of information. To delimit the case, Merriam (1998) suggests that a case study should contemplate a finite data collection, such as limiting the number of people involved in the study and the amount of time used for observations. The single entity chosen for this case is the CT at the IPN. Taking into consideration the scope of my research and questions, I limited my participant

study of the case to 5 female graduate students, 3 male graduate students, 5 professors in the program and 5 administrators in the SE field. This number of participants provided data sufficient to explore the questions and issues involved within a manageable data collection period of three months. The techniques that I employed to collect data were interviews and observations.

Case studies, in combination with the feminist perspective, helped me illuminate particular inequities of women, and to pose provocative questions for further examination. Moreover, I recognize that my study could be richer had I interviewed the staff (secretaries, janitors, and gatekeepers), but I did not have the time to include these employees.

My Positioning

Because the primary instrument in qualitative research is human, all observations and analyses are filtered through that human being's worldview, values and perspectives. It might be recalled that one of the philosophical assumptions underlying this type of research is that reality is not an objective entity; rather, there are multiple interpretations of reality.

(Merriam, 1998, p. 22)

In accordance with Merriam's (1998) discussions above, my research study is shaped by my own position and values, which make it imperative to acknowledge my positioning as both an insider and outsider to the research. By exposing my position, I aim to clarify my claims and to reduce potential problems related to personal biases. As with many of my women participants, I grew up in Mexico and achieved my Bachelor's degree in Mexico. Additionally, as with most Mexicans residing in urban areas, I speak Spanish as my first language and am part of a minority group that speak English as an additional language. However, I am still an outsider in many ways, most notably in my positioning as the

researcher who is learning and living in Canada and working in the field of Education. This situation becomes challenging because I cannot reverse or overlook these positions.

My only option, then, is to learn how to manage these multiple positions, because as Anzaldua explains,

The brain has to split into two functions for those people who inhabit two realities; they are forced to live in the interface between the two, forced to become adept at switching modes. (1999, p. 59)

As a Mexican living in Canada, I live two realities; one reality consists of my Mexican heritage and background and the other my Canadian academic life. At times, these two realities confront each other and at others, they are complementary. However, as Anzaldua (1999) explains, I have learnt to switch my positions and inhabit these different modes of being when necessary.

For this study, my Mexican status provides me with advantages because I know the language and the cultural nuances and practices and could interview participants in their native language. As a graduate student, I am influenced by my current education in Canada, granting me a kind of elevated status, but at the same time, I am positioned as a student rather than a professor. Together with what I know and have experienced as an insider in the Mexican higher education context (if not specifically in SE), this outsider perspective enabled me to draw upon a feminist position to examine the formation and the dynamics of these women. Even though my identity formation in the recent years has been taking place in a Western institution in Canada, I am very much a socio-cultural product of Mexican institutions (including the seemingly more overt, machismo culture). I have had to learn how to negotiate and to write from these double realities.

My experiences as a student in Mexico reveal instances of discrimination, harassment and inequities; perhaps without the possibility or hope for change. However, since I moved to Canada, I noticed a different environment from the one in which I grew up. There was no longer the need to be quiet in order to succeed; there was no need to keep a low profile to achieve my academic goals; there was only the need to concentrate on my studies and to focus on my work. However, other problems surfaced in terms of language and race. Different from my participants, my academic work is taking place in a traditional female field that has its own difficulties. My point here is that every social context has its own situations and challenges to overcome.

As a middle class Mexican woman, I have been empowered with international education and given a different perspective in terms of gender. The Canadian perspective that I have experienced in the universities I have attended offers women the possibility of having a voice and being active actors in their academic goals. Based on my Mexican background and my current understanding of gender, I could not help but wonder how graduate education develops in Mexico.

In the light of my positioning as a researcher with attributes (woman, middle class, Mestiza, Mexican, urban and, more recently, internationally educated), my subjectivities are interacting with my research subjects (Olessen, 2003). Because I could not eliminate these attributes from this project, I employed them as a set of resources throughout this venture to guide the data collection, interviews, and my behaviour. For example, I paid close attention to the way I culturally behaved with participants. I considered participants' age when I interviewed people using *usted* or *tu*; *tu* and *usted* are formal and informal forms respectively of the use of you in Spanish. For Olesen (2003), feminist researchers and their participants work out how protocols on how they will communicate with each

other and this becomes part of the research account. In this case, I had no prior history with any of the participants which may have made them feel uncomfortable; nonetheless I tried to create an environment of respect, safety, and fondness.

Six months after my data collection, a female professor who did not participate in the interviews invited my supervisor, a colleague and I to talk about gender equity in higher education as a form of intervention. The intervention (described below) took place in three days and it added another layer of observations and data gathering during discussions taking place in a public fora. Feedback from these individuals also supported my interpretations of my data and provided different lenses with which to view my positionality and relationship to the study.

Site Selection: Centre of Technology at the Mexican National Polytechnic Institute.

This study was developed in the National Polytechnic Institute (IPN) in Mexico City between 2010 and 2011, after the formal establishment of the national and institutional equity policies. The IPN changed dramatically in terms of gender equity by recognizing and promoting strategies and policies to combat all forms of discriminations against women after the solid establishment of the gender perspective in 2000. The IPN was selected based on its experiences with gender equity.

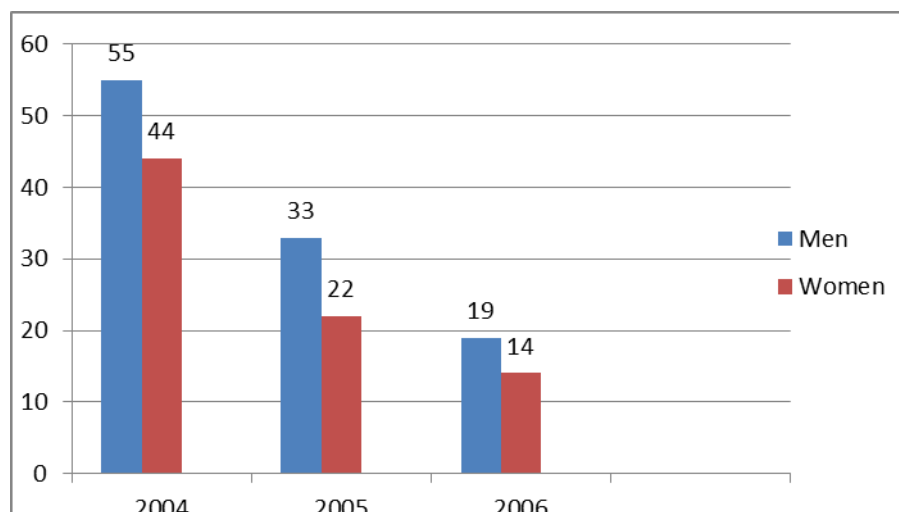
The IPN is centered in Mexico City, although it also maintains research sites and other higher education programs throughout the country. IPN is a complex array of high school, undergraduate, graduate, technical schools and research institutes offering 65 technical programs, 78 undergraduate programs, and 128 graduate programs. Graduate programs are divided as follows: 26 specialties, 70 masters and 32 doctorate programs. IPN is composed of many faculties that work somewhat independently. The Centre of Technology (pseudonym) belongs to one of these graduate services offering a masters and

PhD program. Undergraduate and graduate programs are divided into the following fields of study: engineering and physics, administration, and biological sciences. In 2010, the IPN served 153,027 students and involved nearly 16,474 academic personnel (Estadística Institucional IPN, 2009). The goal of the IPN is to educate people in the fields of technology that the country needs for its economic development.

In addition, IPN is one of the elite universities with high levels of competitive admissions. In the admission process for 2009-2010 academic year, 74 314 students applied for admission at this institution and only 25, 768 applicants were admitted (Estadística Institucional, 2009). However, according to the following Figures 3, 4, 5 and 6 below, there are more men than women in every aspect of the IPN academic environment.

Figure 2 describes the number of staff and the IPN directives by year for the years 2004, 2005 and 2006. In this figure, one can see that despite the global discourse on increasing access of women, the number of women in these positions has actually decreased.

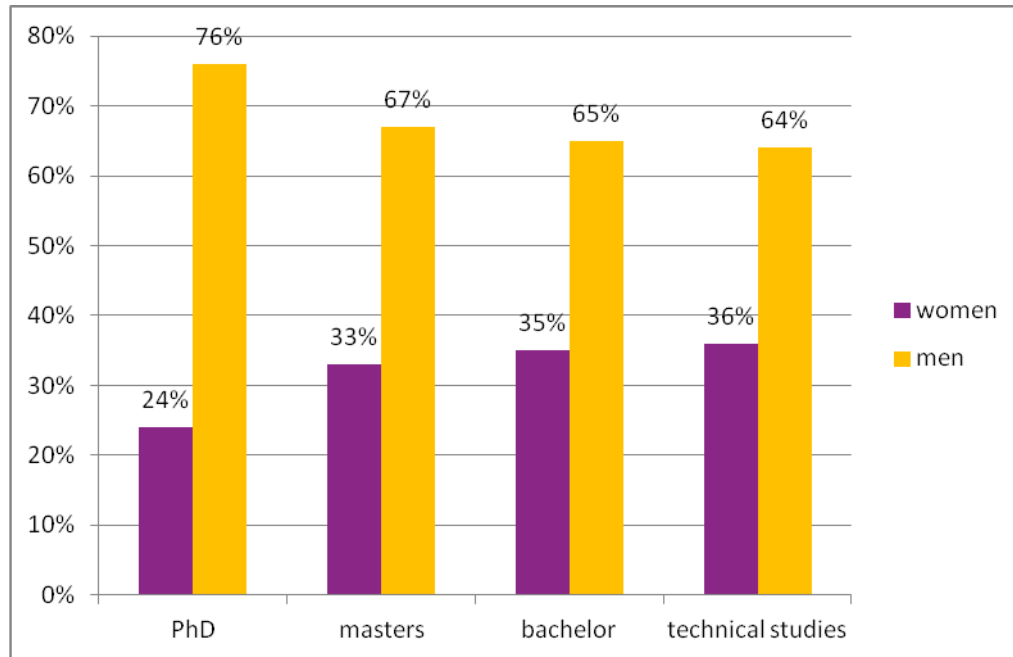
Figure 2. *Administrators and Temporal Staff 2004-2006*



Source: Estadística Institucional Trienio 2004-2006

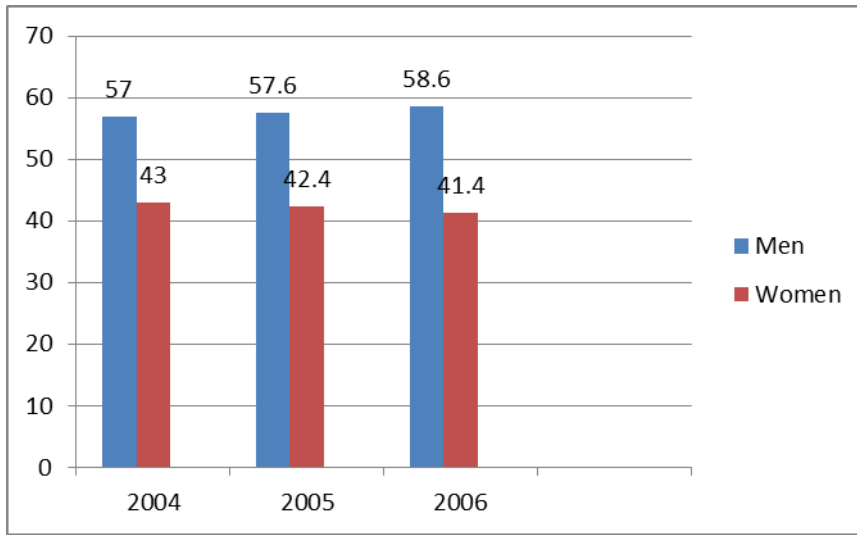
Figure 3 shows the number of female and male professors teaching in the institution, having the lowest number of female professors teaching at the PhD level with 24% and the highest number of female professors teaching at the BA level with 36%.

Figure 3. Total Number of Academic Professors 2006



Source: Estadística Institucional Trienio 2004-2006.

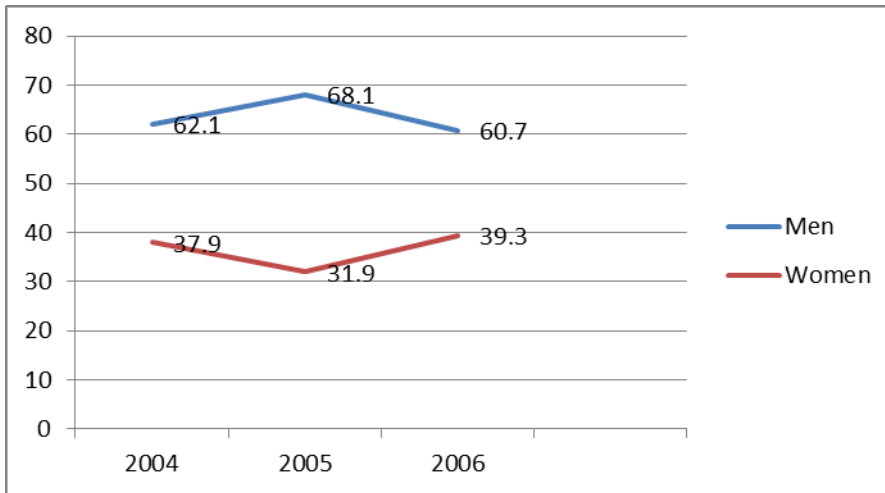
Figure 4. *Students in Higher Education at IPN*



Source: Estadística Institucional Trienio 2004-2006.

Figures 4 and 5 show the number of students according to gender at the Bachelor's and the graduate levels, respectively. Figure 4 demonstrates that there is a close parity between women and men at this level; however, it is not possible to know how these students are distributed by field of study. In figure 5, one can notice a lower parity between women and men in 2004, 2005 and 2006, reaching the highest level in 2006 at 39.3%.

Figure 5. Graduate Students ■ men ■ women



Source: Secretaria academica (n/d).

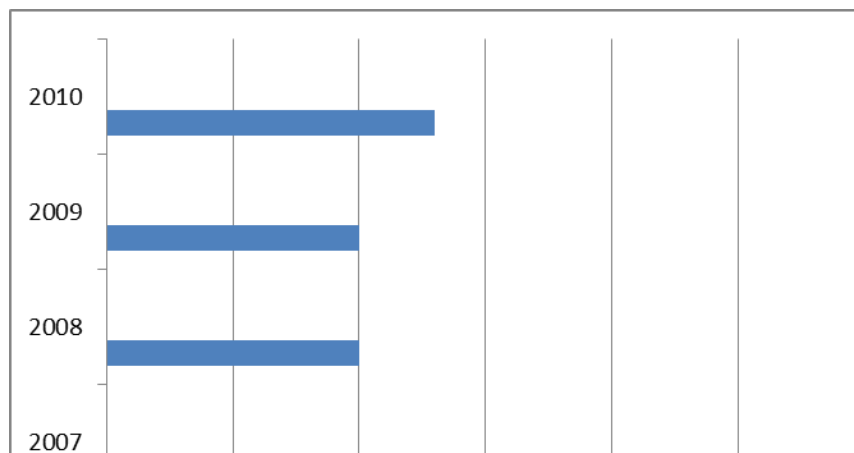
Although there is a notable disparity between women and men in the IPN, one can also recognize the significant presence of women in the institution either as students or professors. Access to education has proved to have the potential to perpetuate or transform gender and gender relations (Kessler, Ashenden, Connell, & Dowsett, 1985), which has been noticed in terms of numbers. Women are gradually becoming a part of the higher education environment. However, the number of complaints about sexual discrimination is still noticeable as illustrated in Figure 6 below.

The IPN has policies and programs to support gender equity. For example, the website *Defensoria de los Derechos Politecnicos* by the IPN shows a series of complaints (that range from physical aggression, checking personal belonging to discrimination and sexual harassment) and recommendations to address these (usually including talking to the professor or promoting conferences related to the complaint). However, no penalties or further actions taken beyond these recommendations are indicated.

On the website, one of the complaints in 2010 makes reference to a female student who reported that a professor made fun of her academic performance in front of other students. In addition, this student says that the professor asked her if obese men turned her on. Among other recommendations to address the complaint, it was suggested talking to the professor and exhorting him to abstain from his behaviour in the future. On the website, there is no reference to any other penalty for the professor.

According to the same website (*Defensoria de los Derechos Politecnicos*), the number of complaints has decreased from 2006 to 2010 almost by half.

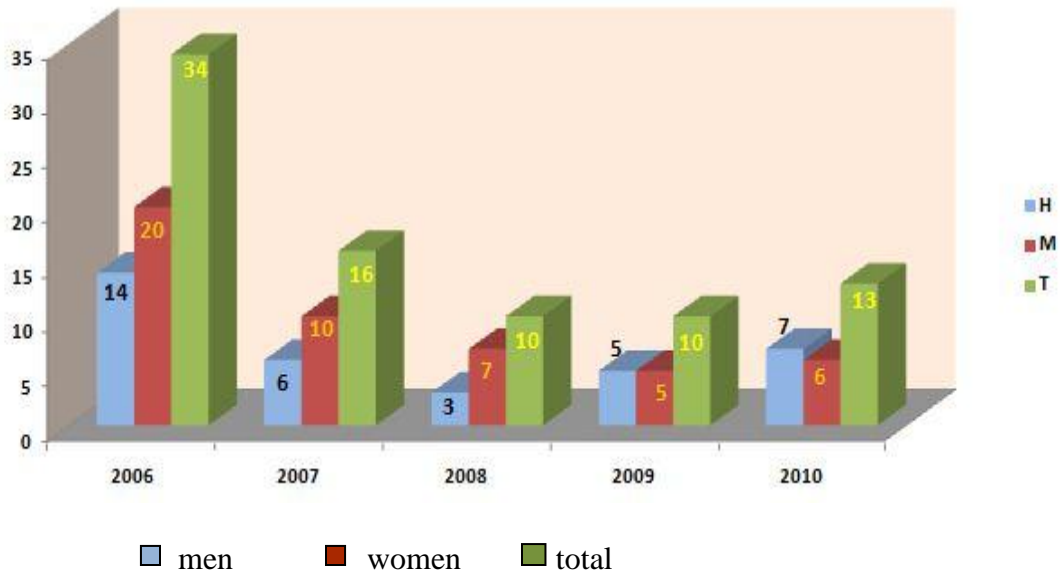
Figure 6. *Total of Complaints Per Year.*



Source: Estadísticas IPN

Figure 7 shows that women complained more of gender-related issues than men in 2006, but this situation was reversed in 2010. Considering the critical complaint level of female or male students in the previous example, one cannot help but wonder if there has been an effective change in the gender environment of the IPN or if complainers stopped complaining due to the lack of responses and/or sanctions.

Figure 7. *Complaints by Gender*



Source: Estadísticas IPN

Of course, this study is conducted in an institution where students, male and female, have the possibility of making formal complaints against professors or other students.

Centre of Technology

The CT is one of the research-intensive faculties of the IPN that offers two Masters' degree programs and a PhD program. This study focused on the experiences of the participants in the graduate programs. These programs are economically supported by CONACyT (National Council of Science and Technology) through scholarships for its students. In 2010, CONACyT recognized one of the Master's programs as being of an international high level of competency. The centre aims to be recognized as an institution of excellence that conducts leading research in technological development and the training of future industry workers. The academic and administrative structures facilitate the

provision of graduate programs aimed at developing quality, responsible, and ethical research projects that enhance tolerance and social engagement (IPN2, n/d).

The CT is located in Mexico City within a large and modern four-storey building and a basement used as a parking lot. The institution was established in 1997 with ample facilities that offer the following: a library, a cafeteria, laboratories, bathrooms, administrative offices, professors' offices, classrooms and two conference rooms. In addition, the building is surrounded by green areas and is guarded by a gatekeeper at each of its two car entrances. CT is one of the better-resourced technology centers in the country.

As with other graduate SE programs in Mexico, the faculty and students are predominantly male. The faculty working at the CT include approximately 50 male professors and less than 5 female professors. In addition to responsibilities as professors, some professors play administrative roles according to the requirements of the school. The school offers two semesters of six months per year. The distribution of the students by gender for the second term of 2010 was approximately 50 male and less than 10 female students in the PhD program. For the Masters' A the number of male students almost reaches 60 and the number of female students reaches almost 20. While for the Masters' B there were almost 30 male students and less than 5 female students.

The attendance of professors, Master's and PhD students is regulated, from Monday to Friday, by a machine that detects the shape of the hand. This machine is located at the main entrance which is open from 6:00 am to 23:55 pm during work days and students are obligated to be present for at least 80 hours every 15 days. The regulation is flexible in case of absence due to a medical situation or an academic event (e.g., a congress).

Study Design

Case study is an inclusive method. Part of its design is characterized by technical features that include data collection and data analysis strategies. Yin (2009, p. 18) summarizes these features as follows:

- Copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result,
- Relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result,
- Benefits from the prior development of theoretical propositions to guide data collection and analysis.

Case study supported me to investigate how gender equity policies impacted on the interactions between male and female participants working at the institute. My case relied on multiple sources of evidence by which to make claims and interpretations of the lived experience of participants.

Data Collection

Data collection refers to the term of obtaining useful information for a study. Throughout the process of data collection for this study, I used interviewing to validate my findings (Patton, 2002). I used triangulation, which refers to the use of two or more methods and sources of data collection to verify my findings and interpretations of the data (Cohen et al. 2007). In this case, interviews from distinctly positioned participants and observations were the two main sources. I also discussed certain themes with my supervisor when he attended the CT and during my data analysis stage.

Triangulation is the attempt to explain more fully the richness of human behaviour by studying it from more than one position. For this case study, I interviewed participants from three different groups namely; students, professors and administrators. I paid particular attention to female students. While observations and interviews were combined in this project, the main source of information was the interviews, with observation used as a supporting strategy (Merriam, 1998). The observations occurred mainly while I was on campus and during a Gender Equity project intervention. Furthermore, I used field notes as described in Gay (et al., 2009) to describe what I had seen or heard on-site through the course of the study and to capture my reactions to and reflection upon my observations, experiences and thoughts during the interview sessions or while I was on campus. These multiple sources of evidence became a rich source of data subject to further analysis and extension.

Sampling

The purpose of sampling was to obtain a richly varied description of the experiences of the participants of the Centre of Technology. Jones and Arminio (2006, p. 65) maintain that a “sample is purposefully drawn with an emphasis on information-rich cases that elicit an in-depth understanding of a particular phenomenon”. Sampling in qualitative inquiry is at times distinguished from quantitative studies by purposeful sampling. In other words, I looked for participants who held information in terms of how gender equity is experienced in the CT. Hence, I enlisted [or recruited] graduate women students in order to understand their experiences of gender and gender (in)equity in a new policy environment.

Additionally, the perspectives of administrators, (male and female) professors and male students provided a different perspective of the CT environment.

For this study, purposeful sampling (Patton, 2002) was intentional because the participants are principal actors in the CT and “are able to illuminate the phenomenon under investigation” (Jones, Torres & Arminio, 2006, p. 66). Olesen (2003) adds:

Feminist qualitative research, as glimpsed in these pages, would appear to be at the beginning of the millennium a complex, diverse, and highly energized enterprise of which it can be said there is no single voice and no single voice can claim dominance or a privileged position. Given the substantive range, theoretical complexity, and empirical difficulties represented in the many topics on which feminist qualitative researchers are working, the multiplicity of voices is apt. (p. 365)

The participants in this study were diverse and held different positions in terms of privileges: a) female graduate students, b) male graduate students c) professors and d) administrators. Staff personnel were excluded because of time constraints, but they could also have been sources of information. The inclusion of diverse voices was to ensure that more than one perspective on the policies was considered, contrasted and compared in the analysis of data.

A central goal of this research was to understand how gender equity was practiced in light of a more gender-equity friendly policy environment. Female graduate students provided key perspectives about their knowledge in the IPN. In their interviews, I got thick descriptions of their participation and heard about enablers and constraints to access the kind of support they had received [or were receiving] from their current professors and administrators, and about their experiences in terms of gender equity policies.

These women students are in a web of relationships with other actors who make up the gender equity ecology of the CT. Professors, administrators and male students are part of the culture in which women participate and thus, they are also key informants. These

actors participate in gender equity initiatives by sharing a space, resisting, contesting, and ignoring them. The majority of the participants in this study are men. However, Harding (1991) says that men can make contributions to feminism or can generate original feminist insights out of their own particular historical experiences. In other words, male participants can also generate accounts that support women and gender equity and shed light on issues facing women in terms of gender equity.

In the new gender equity policy environment, administrators are supposed to know the policy and communicate it to professors and students. Those committed to enacting the policy should also have attempted to address gender problems and promote an equity environment for women and men. Additionally, administrators of the CT were crucial to learning about formal and informal practices and the measures taken towards gender initiatives. On the other hand, professors had great influence on the experiences of students in multiple ways, for example, through courses, evaluation, supervision, scholarships, conferences, and final exams. Further, they had institutional authority that placed students in an unequal relation of power. The professors represented authority in classrooms, while, as supervisors, they could be considered the supreme authority over the students. In addition, they could provide information about available programs on gender equity and their own experiences as professors at this site.

As Jones and Arminio (2006) contend, the collection of data for a study is not a matter of how many; but who, where and which settings will be studied. All participants who volunteered to take part in this study were selected since the total numbers could be feasibly accommodated. In total 18 participants were involved: 8 students (5 women and 3 men), 5 professors (4 men and 1 woman); 5 administrators (4 men and 1 woman). All identified themselves as heterosexual. I recognize that having included diversity in sexual

orientation may have broadened the findings; however, none of the participants identified themselves or others as having other sexuality. The criteria for the selection of CT participants included their willingness to be interviewed for an hour and a half.

Recruitment

To recruit informants, first I contacted the graduate offices to distribute an invitation for women students, professors and administrators to participate in the research through e-mails (see appendix A). The invitation requested interested participants to contact the researcher directly by email or phone if they wanted to make an appointment for an interview. The administration of the school provided me with an office to carry out this study, which compelled a participant to come and sign up face-to-face.

The administrators sent an email requesting that professors' secretaries set a time to talk with me in the privacy of their own offices; I made appointments with the secretaries to interview professors. Three males and a female professor contacted me via email for an interview. I met with them in the office provided by the school. One particular male professor, Gerardo, showed up by the door twice without an appointment while I was interviewing someone else; he was very persistent in his desire to be interviewed and he tried to set an appointment by phone after trying in person twice. We finally agreed on a time and place via email after a few failed alternatives. He wanted to have the interview in his office and so we did.

For the students, seven out of the eight contacted me via email and one in person. Six interviews took place in the office provided: one student was interviewed in a restaurant in front of the school due to time constraints. Only one of the female students, Alicia, wanted to be interviewed outside of the school for fear of being seen participating in this study.

Alicia made it very clear in her email that she did not want to be seen in the school or talking to me, thus, we met in a cafeteria off-site.

Gender Equity Policies

Before interviewing participants I examined the National General Policy for the Access of Women to a Life without Violence (2007), Human Rights for Women, and the policies of the National Polytechnic Institute focusing on gender equity and its implementation at the CT. National and local policies were sources of information for a detailed description of the gender equity environment and how it came about. The National policy was not created specifically for the use of institutions of education. However, these policies provided a framework for addressing gender discrimination, violence against women and gender initiatives that could also be referenced by institutions of education. Different purposes in the document shaped the ways policies are articulated and promoted (Rizvi & Lingard, 2010), prompting my attention to those policies that made reference to gender and/or education. My understanding of the gender policy helped me frame questions that I posed to administrators and professors to examine their understandings of the policy. By referring to the language in the policies I was about to ground the interview questions for these participants in an existing discourse, one that they would be familiar with as employees of the institution. The gender policies then entered into the interview process through my desire to understand how administrators and professors were or were not putting these policies into their daily practice with students and each other.

Interviews

To gather information about the experiences of the participants in terms of gender equity policies, I conducted semi-structured interviews with the participants. Feminist researchers find interviewing effective because it offers close access to people's ideas,

thoughts, and memories described in their own words rather than in the words of the researcher, or in having men speak for women (Reinharz, 1992). This characteristic is important because it provides participants with the opportunity of expressing themselves and, at the same time, produces, non-standardized information that allows one [the researcher] to benefit from the participants' different views and perspectives and to make full use of differences among participants.

I used a set of questions for one-to-one interviews that ranged from 30 to 90 minutes in August and September of 2010. All interviews were conducted in Spanish, audio-recorded and transcribed by me. Most of the professors and the students met with me in an office provided by the institution. The exceptions to these are one professor who preferred meeting in his office because of "comfort" and privacy, and one female student who had wanted for confidentiality purposes to avoid being seen with me on school grounds.

During the interviews, I maintained respect and rapport with the participants in order to encourage them to disclose information (Litchman, 2010). Seidman (2006) suggests that rapport "implies getting along with each other, a harmony with a conformity to, an affinity for one another" (p. 96). The depth of rapport with the participants was limited considering that it was the first time that we met; however, I tried to keep the interview as "a social encounter, not simply a site for information exchange" (Cohen et al. 2007, p. 350). Also, as the interviewer, I demonstrated respect, interest, attention, and good manners (Seidman, 2006) during the process. My "cultural knowledge" (Delgado Bernal, 1998) allowed me to speak with the students in an informal way, for example, by using the "tu" form and professors and administrators in a formal and culturally sensitive way with the use of "usted."

I prepared a set of open-ended questions (see Appendix G) that allowed me to probe for more information and formulate new questions to be brought up during the session as a result of what the interviewee said (Cohen et al., 2007). Semi-structured interviews helped to illuminate gender equity practices for students, school and classroom interaction and treatment. This type of interview permits the researcher to obtain clearer responses in greater depth (Lawson & Phiopott, 2008). In addition, feminist researchers see in-depth interviews as a better option because they encourage subjectivity and intensive dialogue between equals, which are intrinsic features of feminist analysis of gender experience (Sarantakos, 2004). Thus, this technique was useful for exploring the experiences of students.

Furthermore, I used more structured interviews for professors and administrators to learn about the policies implemented and their understanding of gender equity at the administration level (see Appendix G). I prepared two sets of questions, one set for the professors and one set for the administrators. The questions directed at administrators highlighted the level of understanding of gender policies, the procedures to prevent and respond to violence or discrimination, and the implemented programs for gender equity in the CT. The questions for the professors aimed to find out about the implementation of specific practices in the classroom (teaching), lab/offices (supervising) and equitable treatment for students. Although the sets of questions followed an order, the interview with Gerardo took a different structure because he tried to control the interview.

Gender equity intervention

During the interviews, participants described a few gender equity interventions such as: a woman appointed as general director, a gender equity poster, a gender office, and workshops. In my visits to the site, I was able to triangulate (Cohen et al., 2007) their

responses with my own experiences. For example, I saw the poster in the main entrance. I also visited the gender office and found the workshops available on line. Additionally, my supervisor and I took part in one intervention, and we both analysed certain comments and responses from the people involved. These interventions became a part of the research data as they generated additional sources of data from which to better analyze and understand this case.

Data Analysis

The challenge of data analysis is to make sense of and identify significant pieces and patterns in the large amounts of information collected through the interviews, documents and observations. In other words, the main task involves reducing the volume of raw information and transforming it into findings (Patton, 2002). The search for meaning and understanding is the recognition of patterns, and their consistency within certain contexts (Stake, 1995). Employing a feminist lens helped me to identify these patterns in the analysis of interviews (Yin, 1994). Patton (2002) describes pattern recognition as the ability to see examples in seemingly random information. Sometimes it was possible to predict patterns by using the research questions as a template for the analysis; however, as a researcher, I had to be alert for unexpected episodes in the understanding of behaviours, issues, and contexts with regard to my particular case (Stake, 1995), which also meant being attentive to, and considering aspects beyond the original questions asked.

It is important to note that an understanding of the gender equity environment of CT cannot, and should not, be arrived at without an understanding of the wider context. Individual human relations in the CT are shaped by external forces and larger connections. From a feminist postcolonial perspective, I acknowledged that although women's experiences are shaped by these wider structuring relations, women can be knowers or the

agents of knowledge, whose experiences can produce new and other forms of knowledge. Women can produce claims of their experiences and produce knowledge based on their location and context that destabilizing or supplement more traditional and established modes of knowing.

To begin analyzing data, I used Gay et al's (2009) procedure: a) reading/memoing, b) describing what is going on in the setting, and c) classifying research data. The first procedure of reading/memoing consisted of reading, writing notes, searching for recurring themes or common threads so that I became familiar with the data and could identify potential themes or patterns. The second procedure was examining the data in depth to be able to provide a detailed description of the setting, participants, and comprehensive descriptions of the participants and the phenomenon studied to understand the rich complexity of the research (Gay et al., 2009). The third procedure had to do with breaking down the data through coding and categorizing pieces of information. The feminist theoretical perspective proposition helped me to focus on certain data and to ignore others (Yin, 1994).

The categorized pieces of information formed smaller units of ideas or concepts that enabled me to examine, compare, make connections and form categories (Gay et al., 2009). Mertler and Charles (2005) add that the term analysis means to break down data into constituent parts to determine the nature of those parts and how they function as a whole. Document analysis, then, was useful in learning about ways in which the initiatives suggested in policy influence the experiences of the participants.

In listening to and representing the experiences of students in a graduate program, reflexivity required particular attention(Olessen, 2003). I was aware of the significance of my values, position and pre-judgments when analyzing data. To enact reflexivity in

analysis, Krathwohl (2009) advises researchers to write a journal to reflect on one's first impressions, observations, and the relationship with the participant and oneself. This journaling helped me to uncover possible bias, unconscious tendencies, and preferences, among other subjectivities that could affect observations and interpretations and/or findings (Krathwohl, 2009).

Furthermore, Harding (1987) suggests that feminist analysis insists that the inquirer, in this case I, be placed in the same critical plane as the explicit subject matter. "That is, the class, race, culture, and gender assumptions, beliefs, and behaviours of the researcher her/himself must be placed within the frame of the picture that she/he attempts to paint" (Harding, 1987, p. 9). She maintains that the position of the researcher is crucial in the data analysis because he or she is a historical individual with concrete, specific desires and interests that shape the research project.

My beliefs about the experiences of female students and my own experiences must be open to critical scrutiny and considered to be the same as what is traditionally defined as evidence. This can sound contradictory, but by unpacking my subjectivity, I increased the 'objectivity' of my study (Harding, 1987). In the light of this situation, I positioned myself as a Mestiza, heterosexual, middle class woman, and graduate female student in a university in Canada who wants to approach members of a graduate leading university in Science and Technology in Mexico to better understand the ground level operation of gender equity policies at the Centre of Technology.

Ethics

Feminist qualitative research shares the many ethical concerns regarding privacy, consent, confidentiality, deceit, and deception that trouble the larger field, concerns that call for decent and fair conduct of the research to avoid

harm of whatever sort (undue stress, unwanted publicity, loss of reputation) either in the course of data gathering and analysis or in the subsequent text. (Olesen, 2003, p. 361)

Before I started my research journey, I submitted my research project to the Faculty of Education Research Ethics sub-Board of The University of Western Ontario Non-Medical Research Ethics Board (NMREB) and received its approval (see Appendix C). Feminists have emphasized attention to ethics (research sources and methods) and, the researcher (access and informed consent) and power relations in interviewing (Wickramasinghe, 2010). All professors, administrators and students of the CT received an invitation to participate in this study and only those who voluntarily contacted me took part in the interviews. I personally interviewed participants and worked to create a ‘safe space’ in/for the process.

According to protocols, participants were provided with a consent form describing the purpose of the interview and given a brief explanation of how the study was going to be structured. I assured anonymity, voluntary participation, freedom to participate and/or leave the study at any time. I asked participants to give their consent by reading and signing the consent form in Spanish that had been approved by the Faculty of Education.

An interesting issue appears when one looks at the intrinsic power of the researchers in the process (Wickramasinghe, 2010). For feminists, researchers are in a position of power for the role that they play in the interviews (controlling the questions, deciding sometimes the length of the interview, and so on.). I don’t think I was seen as a threat by the professors, the administrators or the students at the Centre of Technology. They knew my role and my status as a graduate student; the age difference and being a woman were other factors that facilitated access to the authorities of the Centre and the students. In

addition, although I was asking the questions, my questioning was largely in response to what they said. Admittedly, in asking male participants about gender equity in a male-dominated discipline, I could be viewed as a threat by asking questions about the status quo. However, given that the interviews were voluntary and given what I have discussed above, I do not think that I had substantive authority or mobilized power during the interviews to make changes.

Throughout my visits to the site and the interviews, I followed the guidelines and regulations stipulated by the ethics board of my university. At the beginning and periodically, I stressed the importance of confidentiality to the participants. I was explicit that we could stop at the time they desired, and/or skip any questions they did not feel comfortable with. While Litchman (2010) suggests that interviews should be stopped when the interview moves to a personal direction and that the participant should be directed to talk to a counsellor, Wickramasinghe (2010) considers that the remembrance and retelling of violence may also be a cathartic process for the women victims and survivors, and there may be a deep psychological need to do so.

As the researcher, I tried to avoid re-victimising any participants through the interviews. I let them speak freely and waited to ask a question when they paused. As Litchman (2010) suggests, I prepared myself with a set of telephone numbers and directions to provide to participants if needed. Fortunately, there was no need to use any of these numbers. I had only one incident that deserved attention in this regard. When Teresa talked about her family, she started to cry and at that point I offered to stop the interview and to direct her to professional support, but she declined the offer and we continued with the interview.

Olesen (2003) talks about confidentiality as another aspect of conducting ethical research. He explains how researchers have to conduct open and honest “negotiations around data gathering, analysis, and presentation. These are closely tied to issues of how and where knowledge is created” (Olesen, 2003, p. 362). In order to ensure anonymity, I interviewed participants in private and offered them the option to have the interview in a place nearby. Seventeen participants agreed to have the interview in the building but due to time constraints, I had to interview one of them in a nearby restaurant. Only one of the participants, Alicia, emailed me saying that she did not want to meet in the building or be seen with me. Also, to assure privacy and anonymity, no identifying information about the individuals is revealed (Litchman, 2010). I used pseudonyms for the graduate program and the participants in order to maintain their privacy. By following ethics procedures, then, I protected my participants for potential harm.

Although the interviews were recorded, I took some field notes of participant responses during the interviews and workshops. For Patton (2002, p. 383), taking notes allows the researcher “to concentrate on taking strategic and focused notes rather than attempting verbatim notes”. I wrote notes to myself about my reactions, participants’ reactions and my own impressions of their responses.

Participants’ Profile.

In this section I provide the profiles of the participants to orient the reader both to the particularities of the participants and to set the context for data analysis reported in the next chapter.

Female students: _S stands for student.

Teresa_S: Teresa was born and raised in Mexico City. At the time of the interview, the participant was 27. She lived with her parents, younger sisters, and a young niece in the

same house (one of her sisters is a single mom). Her father is a medical doctor and her mother takes care of elderly people when possible. Her mother finished a short program as a secretary; but she never worked as such. Both of Teresa's sisters were studying for their Bachelor's degree. The house where the family lives belongs to the sister of her father, who is an anthropologist. Teresa's inspiration to study comes from the desire to provide her family with a house and health benefits.

Susana_S: Susana lives with her husband and daughter. She comes from a small town five hours away from Mexico City. Susana had intentions to continue with her education but she did not do so because she was afraid of leaving her hometown on her own. It was not until she married and moved to the big city to be with her husband that she decided to pursue higher education. In addition, she is proud to be the first member of her family (including cousins) to attend graduate education. She describes her family as working class; but she has managed to have private education through scholarships. At the time of the interview, she was in her 40s.

Olga_S: Olga is originally from Eastern Europe and moved to Mexico with her teenage daughter to continue with her studies. She had intentions of pursuing graduate education but had not done so because of family responsibilities. When her children grew up and she got divorced, she found time to reconsider her intentions. She had some friends from her country in the CT working as professors who advised her to apply to the program although she did not speak the Spanish language. She described how difficult it was for her at the beginning because of the language, but she says that the experience has also been rewarding in terms of academic achievement. At the time of the interview, she described herself as an exotic blond mature woman with no fear of sexual harassment. She has adult children back in her country.

Mercedes_S: Mercedes was born and raised in Mexico City where she has always studied. When she was 19, she married one of her professors from the BA program, but she got divorced a few years later. She was 29 and living with her divorced sister at the time of the interview. Although she does not live with her parents, she disclosed that she provides her mom with a monthly stipend. She comes from a large family of nine children and is one of the youngest. She says that all of her brothers and sisters have a college technical degree because they were supposed to start working for economic reasons as soon as they turned 18. Mercedes considers this situation unusual but understands that the reason behind this is again the size of the family.

Alicia_S: Alicia was born and raised in Mexico City. She was in her mid-20s and was living with her family, parents and siblings. Her parents make a living out of a drugstore that they have had for a few years. She has a younger brother with whom she talks about her work and an older sister. She does not have any responsibilities in her home besides cleaning up after herself. Both of her parents share the housework and the responsibilities of their business.

Male students

Jorge_S: Jorge is very proud to say that he was raised in a small village in one of the most marginalized states (provinces) in Mexico. He has two sisters and a brother, Jorge is the youngest member of the family. His father only finished grade 9 and has worked in multiple temporary jobs as a shoe cleaner and mechanic. He did not comment on the education of his mother. His parents supported their children to continue with their studies. One of them decided to take a college technical degree, the other didn't want to study and the last one finished a BA program. Jorge is the only child to have continued into graduate

education; he recognizes the moral support he has received from his family. He emphasized that he sends money to his parents regularly.

Miguel_S: Miguel was born and raised in Mexico City, except for two years that his family had to move to another state because of his mother's job. He had been studying in the polytechnic from high school to graduate school. But before that, he attended private elementary schools and two different language schools. His sister also attended a private language school. He was 25 and lives with his wife who has a BA in the field of technology. In his future plans they have talked about moving to Denmark to continue with his studies.

Daniel_S: Daniel was 30 years old and lives with his parents, his older sister and his younger brother. His dad has a store/drugstore and his mother worked as a secretary for many years before she retired now. Both of his parents are from different states but moved to Mexico City in search of better economic opportunities. When his brother was studying his BA, his brother had to attend a private university because the school went through a one year strike; apart from this private university, no one in his family had been to private schools.

All the students interviewed seem to belong to the middle class, except for Jorge who identified himself as working class. However, despite the participants possibly belonging in the same economic class, there are still differences within the same group. For example, Susana lives in her own house, while Teresa's family is living in her aunt's house.

Professors: _P stands for professor

Pedro_P: As a child, Pedro's father abandoned the family. As a child, Pedro lived with his mother and brother in a house provided by his grandparents. Currently, he lives alone in an apartment close to his mother and she is the one who pays for his utilities. His

mother has a long trajectory in the field of law. Pedro is single with no children, in his mid-40s, and is a full time professor and recognized himself as upper socio-economic class. In addition, he stated that his mom has influenced him in his understanding of gender equity.

Omar_P: Omar is married and has two teenage children. His parents look after his children while his wife works. He was in his mid-40s.

Janette_P: Janette studied in the institute and is now working as a professor. She was also a chief (equivalence of Dean) of the unit the year before. She lives with her partner and was in her early 40s.

Igor_P: Igor was married to a professor who works in another faculty of IPN. They have two daughters. When he was a child he went to a Catholic private school. Igor has been working in the school for 10 years and has only taught one female student. He was in his early 40s.

Gerardo_P: Gerardo was married with children. Gerardo has been a professor or teacher at different levels including middle school. When he was 14 years old, he left his hometown and his family.

Alex_P: Alex is from Eastern Europe and he did not want to talk about his marital status. He has worked as a coordinator and a professor in the school.

Administrators: _A stands for administrators.

Arturo_A: chief of one department.

Jose_A: the dean of the school.

Selene_A: representative of the school.

Tomas_A: associate dean.

Victor_A: chief of one department.

Conclusion

This is a case study of how gender equity policies are manifested at the Centre of Technology. The methods employed in this case involved observations and interviews. I interviewed 18 participants: graduate women students, male students, professors and administrators. With the primary group, female graduate students, I used open-ended interviews to understand how women experienced this male-dominated program. While participants (professors, administrators and male students) shared their dominant perspectives on gender equity, women had the chance to describe their experiences and give their perceptions of the topic. I used more structured interviews to illuminate how participants were conceiving of gender equity and its enactment in the CT. In addition, I made observations at each visit to the CT and more substantively during a Gender Equity intervention in which I was invited to participate. All of the participants voluntarily agreed to participate in this study and I followed the ethical protocols to ensure anonymity. The next Chapter describes the findings of the study and analyses how gender equity policies are enacted at the CT.

CHAPTER 5: ANALYSIS AND DISCUSSION

Understanding how gender equity was conceived and enacted (or not) in the Centre of Technology of the IPN was not as straight forward as it may seem. There was complexity in the data around how gender equity policies impact the environment and engage and disengage actors of the CT. This Chapter draws on the policy documents, interviews and observations to provide an in-depth, non-evaluative analysis of how the gender-equity-friendly policy is being taken up on the ground.

The current Chapter is divided into two parts. First, I describe the policy framework by outlining the specific policies most applicable to gender equity, from the transnational to the local level. In the second part of this Chapter, I examine gender equity as conceived and practised by actors at the CT. This more substantive part is divided into four sections as follows: (1) material manifestations of the policies, (2) conceptions and practices of gender equity and inequity and (3) an in-depth analysis of the perceptions of a handful of women graduate students on gender equity given their participation at CT.

Policy framework

As emphasized throughout this thesis, Mexico has committed to promoting gender equity through participation in international agencies such as the Committee on the Elimination of Discrimination against Women (CEDAW), Education for All (EFA), and the Millennium Development Goals. In turn, these agreements have informed the establishment and content of national policies on gender equity such as: the *Access to a Life without Violence for Women*, *General Policy for Equity between Women and Men*, *Human Rights for Women* and *Policies against Sexual Harassment* in each province.

Generally speaking, Mexican national policies with a gender perspective have focused on the eradication of violence, on the promotion of equality between women and

men, and the elimination of gender stereotypes that harm and discriminate against individuals. Specifically, the *Access to a Life without Violence* and the *Human Rights for Women* policies contain specific sections for education and gender. The *Access to a Life without Violence* policy specifies in its Chapter II, “labour and teaching violence,” (articles 10 to 15) explicit regulations, procedures and recommendations. In the policy violence is described as abuse of power that damages self-esteem, health, freedom and safety, and disrupts academic development and equity. Instances may consist of only one or a series of events. Within this framework, the policy also explicitly identifies sexual harassment, defined as verbal and/or physical sexual offenses, as one form of violence.

Chapter II of the policy promotes a violence-free environment for all the participants in academic institutions and it articulates sanctions for non-compliance. Article 15 specifies that with regards to sexual harassment, the government should adopt the following policies:

- I. Reclaim women’s dignity in all areas of their lives;
- II. Establish initiatives that contribute to the elimination of violence in academic institutions and working centres;
- III. Create clear administrative procedures to punish sexual harassment crimes and inhibit their commission for these centres;
- IV. Under no circumstance should the name of the victim be revealed in public to avoid other types of sanction, including being pressured to abandon the institution or work;
- V. For the purposes of the preceding section, previous complaints about the same harasser should be taken into consideration, keeping the anonymity of the complainants;

VI. Provide the legal and psychological counselling to anyone subjected to harassment or sexual harassment; and

VII. Implement administrative penalties for the immediate superiors of individuals bullying or harassing when the superiors fail to receive or act on a complaint.

Alternatively, the primarily symbolic, *Human Rights for Women* policy establishes that, based on the national constitution, women have the right to receive education without discrimination, to reach higher levels of education, and to receive adequate training. The document also specifies that education is obligated to promote solidarity, equity and respect in order to stimulate intellectual and emotional skills along with human rights.

Furthermore, it states that the curriculum should consider the context and women's specific needs.

In sum, international and national policies establish a wider framework to examine gender equity. It is because of these policies that the possibility to combat harassment and education without discrimination exist. In addition, these policies talk about initiatives, procedures, sanctions and penalties to eliminate violence in the institutions of education; thus, they supply material supports for institutions such as IPN to improve gender equity.

Before turning to consider the policy framework of the IPN, it is important to note that institutional policies are informed by the larger national and transnational framing of gender equity. It is also the case that given universities' semi-autonomous status, it is possible that transnational or Western-institutional policies (or mindsets) may also inform how a university orients its policy, given the increasing number of international exchanges between university faculty and administration. These potential trans-institutional policy flows, though, are beyond the scope of this study.

IPN policies

The IPN has developed its own set of internal regulations. In terms of labour and academic guidelines, the IPN is regulated through a complement of policies: General Policy, the Polytechnic Legislation, the Behaviour Code, the Policy for Graduate Students and the Policy for Undergraduate students. Together, these policies establish the ground work for a positive learning and working environment among the participants of the IPN (professors, administrators, staff, and students) and guarantee access and support for individuals. Their main goal of these policies is to promote a culture of freedom, tolerance, respect, and peace (“Acerca del instituto,” n/d).

Besides promoting a fair academic environment for women and men, IPN policies also include sanctions that range from written requests to temporally or permanent suspension. Causes for suspension are described as acts of violence or maltreatment against a superior, colleague, or family member during or after work; destroying or damaging school property; and immoral behaviour during work. Specifically, the Behaviour Code states that employees have the obligation to create a fair, polite, warm and equitable environment based on the policy of the IPN. Although these policies do not explicitly name gender discrimination as a problem, they clearly state that a fair environment has to be promoted for all individuals.

In keeping with national and international agreements, the IPN has developed a gender office and two campaigns devoted to eliminating gender discrimination: the Gender Office (2008), IPN Violence Free Zone campaign (2008) and Eradicating Sexual Harassment campaign (2008). The office and these campaigns draw on gender equity principles for the establishment of its aims and initiatives. The gender office is in charge of all the programs of the IPN and aims to:

- Develop affirmative actions to support women and men through research, activities, agreements, institutional projects and academic programs. These actions are to be designed to impact the professional, academic and personal lives of the IPN community.
- Establish a cooperative network with other institutions and public organizations to design policies and public programs that promote gender equity among women and men.
- To organize and support congresses, seminars, workshops and projects that support gender equity and aim to eliminate violence against women (“Que es el PIGPG,” n/d).

In addition, the IPN gender office has a website articulating its mission towards equity and the initiatives to be developed. For example, it states that its mission is “to promote equity and non-discrimination in every aspect of the institutions in order to secure the education of new professionals with the understanding of gender equity and same opportunities for women and men” (“Que es el PIGPG,” n/d). The website also provides a series of phone numbers for social supports, such as: SOS Gay, young to young, emergency pill, and AIDS. In the agreement within which the program was established, the articles are directed towards the promotion of a fair environment and human rights for both women and men.

Additionally, the IPN Violence Free Zone and Eradicating Sexual Harassment campaigns have websites where they stipulate their goals. The Free Zone campaign was launched in 2008 with similar programs in other public universities (Universidad Pedagógica Nacional, Colegio de México, Universidad Nacional Autónoma de México, and Universidad Autónoma del Estado de México) and a program was later founded in 2010 to

strengthen the mandate. As for intervening in gender violence, the program established a framework to talk about its various manifestations. In terms of sanctions, the program requires follow-up for any complaint and establishes a framework to address the various manifestations of violence. The campaign to eradicate sexual harassment publicizes the importance of denouncing, confronting, and identifying harassment as acts of violence and discrimination.

In general, policies in the IPN call for a fair environment to support students academically. By establishing a program and two campaigns exclusively directed towards gender equity, the IPN is taking concrete measures to promote gender equity in higher and graduate education.

Gender Equity ‘On the Ground’ at CT

In the second part of this Chapter, I make reference to the on-the-ground manifestations of the policies. This part is divided into material manifestations of the policies, conceptions and practices of gender (in)equity and participant’s lived experiences with the policies. Given the importance of the voices of the women graduate students to my study, the reported experiences of women graduate students is presented under the following rubric: ‘the good, the bad, and the ugly.’

Material manifestations of the policies

In the first sweep of my analysis, I make explicit the material manifestations that surface in my interviews with the participants. Some of the participants of this study were quite eager to describe the manifestations of gender equity and inequity at the CT. The common manifestations of gender equity policy that participants noted were as follows: a) *female director*, b) *the institutional gender office*, c) *parental leave* and d) *a project*.

a) Female general director

One striking development at IPN was the hiring of its first female director, appointed from December 2009 to December 2012. This was not lost on many of the participants who noted this hiring as marking a significant event in the shift towards ‘gender equity’ at IPN. Mainly, administrators and professors described having a female director as a concrete realization of gender equity policy.

For example, Tomas A, found that the IPN was taking the lead (perhaps throughout Mexico) in terms of gender equity by appointing the first woman as a director. For him, gender issues became more “on the radar” after she took up the position.

With the first female director..., because I don't know how many female directors of universities are in Mexico; but curiously, she is the first woman here, as far as I know. Since she was appointed, more information about gender is available in the IPN.

Additionally, Jose A, one of the administrators, commented with pride that the IPN was in optimal shape in terms of equity because to his knowledge, there were no or perhaps few public universities directed by women. He talked about the access of women to the institution; however, he was mainly anxious about a woman’s appointment as a general director. Jose admitted: *“That [female director] is also in a very delicate situation because as a woman she might prefer hiring more women, right? Where will men stand there?”* Jose was not alone with this worry. For example, Jose stated that from chatting with the male deans from other Faculties, they all shared his anxiety. They were concerned that, as a woman, the director may favour other women over men, invoking the worry of so-called reverse-discrimination.

Gerardo also expressed satisfaction with the IPN taking the lead in gender equity initiatives, but in reference to the director, he seemed similarly conflicted. He mentioned

that she was the first woman to occupy the position and this fact deserved recognition mainly because there were no other female directors. However, he began to blame women generally for their lack of representation in the IPN. The problem for Gerardo had nothing to do with the policies or options because they have always been there, but in women's lack of competency for the job.

Gerardo_P: ...we have the first female director after who knows how many years.

But, well, one should also consider how many women have been able to take up such position through the years, and how many of them have tried to get there ... Maybe it wasn't fair just because of the number of years with male directors.

He doubted the director's abilities because, for him, she was assigned to this position as a form of affirmative action in order to improve equity. Gerardo, among others, had little problem recognizing his conflicted stance toward gender equity. In fact, in terms of my position as a researcher, I do not think I placed pressure on my participants to be politically correct. I attribute my male participants' willingness to openly voice their concerns with the gender equity policy to my position as a Mexican woman graduate student. In this regard, my data can be considered "reliable" because my own position may have mitigated against any elevated authority as the researcher.

The appointment of a woman as the director of the IPN received special attention because it involved a woman directing this highly male-dominated institution. For Tomas, gender issues became visible after she became the director. Jose found the appointment of a female director as a progressive gender equity initiative towards women, but emphasized the stress it was producing for some other male administrators. Gerardo blamed women themselves for their lack of representation and was against affirmative action initiatives, which he claimed lowered standards. Interestingly, none of the participants mentioned the

director's administrative or academic background. In sum, these participants seemed more concerned with the possible negative effects of the appointment of the director on the professional and intellectual climate of the male faculty, than the possibilities for equity her appointment might present.

b) Institutional gender office

Another commonly cited manifestation of gender equity policy at the CT was the creation and operation of the gender office. Victor, one administrator, acknowledged this office as the main promoter of equity for the CT and suggested that its initiatives were useful against violence and gender discrimination. He said:

Locally, we receive posters about gender equity and against violence [from the gender program]. These posters address mainly violence against women and men. Violence is not permitted and if there is any sign of it, there are opportunities to complain.

Administrators commented that the presence of the office had produced change since its inception in 2009. For example, one professor with a long trajectory in the IPN identified a transformation after the establishment of the program. Janette stated:

Before there was no place where you could go and complain. Now, you have the option of the Gender Program Office and they impart courses and stuff, you only have to attend.

For another administrator, Arturo, the office is concerned mainly with advising women about their rights and the potential problems if they do not report an incident. Also, he recognized that the aim of the office is combating sexual harassment and discrimination:

The gender office promotes women's rights and the danger they face in case they do not denunciate their problems. Basically, the office attacks sexual harassment problems, discrimination, things like that.

Arturo also commented on how these initiatives were promoted through the Office:

When one is an administrator, we usually receive the information and pass it on.

We don't coordinate any courses, but we receive the information and re-send it via emails or posters. We invite our community to attend courses from the office.

Along with citing the Gender office as a somewhat positive gender equity initiative, participants often referred to a small set of evidentiary activities promoted by this office, such as: circulating posters, e-mail invitations to conferences, and providing for open access in accepting women as professors and graduate students without discrimination. Despite their enthusiasm in describing these activities, participants did not seem to take any local responsibility or have any funding for the promotion of gender equity apart from what was generated from the office. Tomas said *“there is no specific funding for gender equity; but we usually receive posters or information about it from the Gender Office.”* One of the participants added that these initiatives were coming from outside and from upper levels of authority, even as the needs emerge from the lower levels.

According to many of the administrators and a professor (former administrator), the gender office promoted a fair environment through top-down preventive initiatives in the IPN. In addition, administrators and professors described the office as a program that promotes denunciation with clear procedures for possible victims of harassment. Despite professors and administrators' description of the gender office, two female students, Susana and Alicia, commented about their own experiences and lack of success in using this office. Alicia and Susana both described their frustrations with the lack of response from the Gender Office.

Susana_S: I really laugh at [it] because I went there and spoke in person with them, I said: “go there, ask, do something” So far, nobody came, nothing happened. I

complained and denounced and nothing. For me, that office and that poster [an initiative from the office] are totally useless.

Alicia_S: I phoned them and sent an email to complain, so far there has been no response at all. It is useless!

Janette_P, one of the professors, made reference to the case of Susana in her interview. She accompanied Susana to fill out her complaint to the office and described what happened afterwards:

Janette_P: The student didn't just forget about it. (...) when we tried to find out the status of her complaint, first we were told that it takes time to corroborate the information, find witnesses, etc. It seemed a slow and long process. Now, they are saying that time was wasted and nobody paid attention at the right moment. It has been over a year!

Unlike Susana, Alicia and Janette who expressed skepticism, the rest of the participants described the Gender Office in positive terms, specifically referencing at least one of the following initiatives promoted by the office during the interviews: a) *the violence ruler poster*, 2) *articles*, 3) *conferences and*, 4) *workshops*.

1) Violence ruler: All the interviewees mentioned the presence of a poster produced by the equity office. Indeed, as an outsider to the CT, it was perhaps the most dramatic visible “gender equity” intervention in the building. The *violentometro* [violence ruler] was considered a palpable object for emphasizing gender equity (see appendix B). It was displayed strategically where everybody could see it at the entrance behind the check-in machine. This colourful poster delineated a hierarchy of gender discrimination and listed, according to the level of violence, possible consequences, recommended actions and a phone number for contacting the Gender Office.

All the participants in this study made reference to this poster, though their perspectives were different based on their experiences. For example, Janette_P stated:

There is a very interesting poster entitled Violence ruler that has a scale from 0 to 10 with all the levels of aggression. That is, they are attentive to any signs of discrimination. We even have an office specifically for that [violence].

Janette described the poster as a resource for framing violence under certain categories and as indicating that the office works against discrimination. Similarly, male students commented about the poster. For them, there were two concrete examples of gender initiatives in the CT, one being the access of women to jobs and the program, and the other the poster.

Male students described the poster as a key element in their understanding of violence and discrimination. For example, one of the students commented that what he understood by gender equity was based on the description offered by the poster.

Daniel_S: Recently a poster was displayed at the entrance. It was a very large poster that described violence. It would be great if you had the chance to see it. It was something like... well, it described verbal harassment, touching someone, jokes, rape, you know, I think killing someone was the worst. A very good poster!

Although this very visible poster was cited as evidence of progress by administrators, professors and male students, two female students made contrasting statements. These two participants demonstrated frustration and anger towards the poster and the Gender Office. At first, they hesitated to talk about their position and thoughts, and I had to remind them about the anonymity of the interview. Despite their hesitation in talking, one of them did say:

Susana_S: There are these posters and every time I see them I laugh, because I addressed the people of the Office. The possibility of denouncing someone's excessive behaviour and those sorts of things... [She made a gesture of discomfort]. I told them Go there [to the CT]. Ask." They never came! [to the CT]

Susana recognized the existence of the poster, but based on her own experience, the poster is a token, because there was no sanction against the perpetrator, nor even any sign of response. The other student who expressed anger and frustration limited her comment to sarcastically saying that it was only “*an adornment*” in the building.

2) Articles: One participant noticed that the Gender office publishes articles about equity in an institution wide published magazine. He commented that this magazine includes articles about highly successful women who were doing significant research in certain fields of technology. Reading articles about PhD female professors made him believe that these successful women represented a strong change in the institute and deserved recognition.

3) Conferences: The gender office advertises and organizes conferences related to gender equity, especially on representative days like Women’s and Mother’s day. According to Selene, these conferences are very well advertised, promoted and attended. She participated in one of them; however, she recognized that she does not have the time to attend them all because of her duties.

Selene_A: People attend these conferences [about gender equity]. They like it. Let me tell you that auditoriums get full with these conferences even when people have the options to watch them on line. In fact, I arrived an hour before and I could not find a seat last time. These conferences are very successful.

According to Selene, the speakers are usually famous writers, show hosts or authors invited by the Gender Office to inform people about equity. Igor also recognized the strong effort that is put lately towards equity and the significance of having a conference, specifically for women in science. This professor said:

There used to be no information [about gender equity], but they are stressing it a lot lately. There was a lot of information and invitations for these conferences. Just last year, there was a forum about women in the sciences.

Although participants described the conferences organized by the Gender Office, not many of them admitted participating in any of the conferences due to time constraints and priorities. For example, one of the participants, who defined gender equity as access, felt he had little to gain from gender workshops. Alex stated, “*Because I understand what gender means, I have neither the time nor the necessity to attend these conferences.*”

4) Workshops: In reference to the workshops organized by the gender office, administrators and professors said that they were aware of the existence of workshops; although none of them had attended any.

In sum, all participants seemed to have a general understanding of the policies and practices mainly put forth by the Gender Office. However, based on their social location, participants gave mixed responses in regard to these initiatives. For example, while female participants, with the exception of Janette_P and Selene_A, saw many of the practices as superficial and non-existent; male participants acknowledged the need for the initiatives while showing some reluctance to participate. These responses then, demonstrate that the gender policies have yet to make a significant impact on the educational interactions of students and professors.

c) Parental leave:

Participants described parental leave as another form of material manifestation of gender policies. In 2010, the IPN became the first educative institution to incorporate a 10 days' leave for fathers. Specifically, male professors and administrators noted that paternity leave was an important sign of gender equity and a recent policy in effect that had reached

even the national news. They also commented on the need for other universities to follow the IPN example in terms of parental leave for men.

Jose_A: The IPN now has paternity leave. Other universities [in the country] should follow our example in terms of this kind of initiative.

Pedro recognized the paternity leave initiative and cited an example of one professor in another program of the IPN.

Pedro_P: In Mexico, well, there is paternity leave in the IPN. That is sort of new. I even know about one professor in another Centre, who at the moment is not going to his work because his wife just gave birth to his child. He used his right for absence. Women do have their 60 days off in total. Men didn't have it until now.

Pedro recognized that parenthood requires time and energy from both parents, but when he referred to pregnancy, he suggested that women were extremely capable of working at any stage of their pregnancy, even minutes before their water broke.

Pedro_P: I have seen too many female professors who waited until minutes before giving birth. A professor whom I know almost gave birth while she was teaching in the classroom. She almost had her child at work. Many of them go from work directly to the hospital, right? I have seen it, no one has told me.

Based on the experience of one woman, Pedro made generalizations about other women. For him, pregnancy or giving birth made no difference in the life of academic professional women. In addition, he discussed that women should not have any special treatment based on their pregnancy.

Pedro: We have evaluations every two years, which mean 720 days. Maternity leave provides women with 2 or 3 months at most for childbirth. 60 days is not really that much in terms of production... I think that pregnancy or maternity is not really a disadvantage for women.

Neither professors nor administrators made any further comments about time off based on pregnancy, perhaps because they, as IPN employees, are granted a certain period

of time after having a baby. However, the situation was much different for students. Two professors did mention, though, their reluctance for taking on women students. For Alex and Gerardo, women were not so desirable as students because of their potential to become pregnant and have family responsibilities.

Alex_P: I talk to them about the risk of falling behind if they get pregnant. So far none of them has ever gotten pregnant.

When Alex happens to have a female student, he warns her about the difficulties of pregnancy. As he proceeded, he added that the reason why falling behind is problematic is based on the academic and economic consequences for the centre in terms of funding.

We [CT academics] have a very special situation because we are pushed to finish with students in a certain time. Otherwise the program will be penalized and new students won't have the chance to receive a scholarship. So it is very important for the program that students finish on time.

Alex explained that the CT faculty need to graduate their students in a certain period of time without invoking excuses, implying that he viewed pregnancy as such. According to his statement, future CT students would be penalized economically, if students did not graduate within a set period. Gerardo commented that pregnancy is a factor that he takes into consideration in the supervision of students.

Well, if the woman is 31 and is just starting a PhD, what if she gets pregnant? I am sorry but it [pregnancy] is a factor to consider, I need a student to be there, what do you think?

As Gerardo continued talking about students who may get pregnant, he added,

Well, women, we have observed it. It has been observed for a while. You know what, I am having a bad time with this, uh, well, I will get pregnant. But we don't see the whole context, there is an institution that is observing us, giving us funding, and it does want to see results, and we may not be able to give any results. Women have the right to get pregnant, nobody can deny it, but what do we do as professors?

Gerardo further suggested that women get pregnant when they do not know how to solve a problem or when they have difficulties with a subject. His attitudes toward pregnancy showed he has negative bias towards women and their capacities to be mothers and academics. To justify this bias Gerardo made reference to another unnamed colleague who observed that women use pregnancy as an excuse to mask their difficulties in the program. To further reinforce this bias against women of child-bearing age. Gerardo as did Alex, cited the institution's policy on program completion, which they felt pushed professors to take students that would finish their studies in a given amount of time.

Unlike Alex and Gerardo who suggested that female pregnancy is problematic, another professor elucidated that the problem was not pregnancy or female students, but the difference between the rights of professors and the rights of students.

Igor: Yes, CONACyT should definitely take into account pregnancy. It only considers it for academic professors and women receive a year of extension. But they should do the same with students; that would be fair.

Professors and administrators recognized their rights for parental leave when they emphasized the right for fathers as a new initiative in terms of gender equity. However when it came to supporting female professors' pregnancy, Pedro felt that they should be treated no differently than the men in terms of work-load and evaluation of performance. Similarly, Alex and Gerardo expressed a bias against female students who, according to these professors, use pregnancy as an "excuse" and because these students are often unable to meet institutional deadlines. Only Igor recommended extensions for pregnant students.

Professors' view on pregnancy revealed a problem against women in terms of their productivity as female academics and students. Interestingly, while male academics recognized men's need for parental leave; they failed to notice that their female

counterparts and students might be in need of more accommodation by the institution. Instead they upheld the institutions policies on productivity to make a case against why they were reluctant to support female students' needs for pregnancy and parental leaves. Only one male professor recognized that female students were in need of the same institutional supports as those given to the faculty when it came to the issue of pregnancy and maternity leave.

d) Project

The last material manifestation of equity for participants was the development of a gender project. Basically, the people who described the project as an initiative of gender were the administrators. One of the female professors was awarded funding for a project against violence that promoted gender equity. The project was economically supported by CONACyT and was (rhetorically) promoted by the CT administration. The CT supported the initiative by welcoming and endorsing it, encouraging attendance, and collaborating in the organization.

This project aimed to implement gender strategies in the CT. Because I had been doing my research at the site, I was invited to contribute to the project in a series of workshops. In support of the project, my doctoral supervisor and a doctoral colleague researching gender issues joined me in preparing and conducting a series of presentations and discussions about gender over 3 days in early February of 2011.

The first couple of interventions began with more formal presentations followed by discussions where attendees (students and professors) could ask questions or give their comments. The last session was a more open forum for participants to come up with collective ways of moving gender equity forward at the CT. A few professors from other faculties also experiencing challenges with gender equity attended some of the sessions. In

addition to taking part in this initiative, I was attentive to how the CT actors were discussing issues of gender and gender discrimination in these public fora. Key themes that emerged in response to our presentations and to each other's discussion points follow:

Pregnancy: The lack of maternity leave for female students in the IPN was a key challenge for promoting gender equity. One professor from another Centre stated that she had had pregnant students who struggled a lot to finish on time based on academic regulations. The problem for her was CONACyT's scholarships. After her comment, other professors agreed with her idea and stated that it was also a lot of pressure for professors, since they need their students to finish on time to prove their competency. Considering that female professors and administrators are granted time off, they proposed writing a letter to CONACyT to include pregnancy as a valid cause for granting an academic extension to students.

Access: A professor and an administrator from other programs were concerned about the low number of female students who attended the IPN in general, but mainly at the Centre of Technology. With this situation in mind, a few female professors and students proposed interventions to increase the potential numbers of women applying to programs like the CT, such as targeting girls in private and public schools and encouraging them to attend the CT.

Misogyny in the wider culture: One of the professors was concerned about the culture of hatred for women in the wider Mexican context. He made reference to the feminicides taking place in Ciudad Juarez and how changing a culture or mentalities could not take place over night. For him, women needed extra support to succeed in the institute and he proposed the establishment of a local office that would support new female students. From his point of view, a woman had to be in charge of this program.

Lack of participation from the Gender Office: One of the administrators who attended the workshop was very dissatisfied with the absence of the director of the Gender Office. The organizer explained that she had been invited and had not responded, despite multiple follow-ups.

Although this project was a small initiative, interested participants of the CT were able to share their concerns and possible solutions. The project furthered the emergent understanding that gender equity is a viable and necessary topic for discussion at the CT. The professor's project continues with guest speakers, research and the construction of a website. For the purposes of this study, our intervention also allowed for other forum for understanding gender equity at the ground level of CT outside of the interview format. It also allowed for the possibility for my doctoral supervisor to offer support in the data analysis stage as a form of triangulation.

In this subsection, I have attempted to represent a straight-forward description of the common elements that emerged as participants discussed the manifestations of gender equity at CT. Apart from the contrasting perceptions around the efficacy of the Gender Office and the poster, most of the participants made references to a set of common manifestations under the discussed categories: the female director, the gender office, parental leave, and the project. The next subsection turns from description to analysis to illustrate how gender equity and inequity are conceived and practiced in the lives of participants.

Conceptions and practices of gender (in) equity

I have thematized participants' perceptions of gender equity and its enactment at CT in the following categories: access, unchallenged stereotypes, practicing denunciation and sexual orientation and homophobia. Since gender equity was described in terms of access, I

questioned participants about the access of women to the CT. Also, while participants described support for gender equity, they recalled a few unchallenged stereotypes. In addition, participants observed common problems in regard to denunciation, sexual orientation and homophobia. Under the category of unchallenged stereotypes, I described a professor's complex views on gender equity. At first sight, this professor seemed to support gender equity; however, his comments reveal deep conflict he has with the initiatives.

Access

During the interviews, most participants understood gender equity as equal opportunities to access all the services provided by the institute. They most viewed the CT as granting access to both women and men. Also, the administrators commented:

Selene_A: The door is open for everyone. I have never seen discrimination, nothing like: only men are welcome for example. We even have female professors. So my point is that the door is open for women and men, there is no discrimination, no limitations.

Victor_A: Women have the same opportunities as men do in order to promote professional development in different aspects of human life. That is gender equity for me.

These interviewees continued to describe positive experiences with in the gender equity environment in the CT because women and men had the same opportunities to access the program. As participants defined gender equity in terms of access, I could not help but ask *where women were* in this institution. When questioned about the very low numbers of female students and professors, administrators insisted that the program was open to every person, women or men who wanted to apply, without discrimination. For example,

Victor_A: The graduate program is open to both women and men. There are no restrictions based on sex; the only restriction is to pass the exam and have all the requirements.

One of the administrators commented on how the requirements are available on line, thus it was open for potential prospects without gender differentiation.

Selene_A: The [application] is available on the internet. It is also published here in the school. So anyone who comes can know what is being offered. If the person has the requirements to enter they can do so... If women don't come, it is because they don't want to.

Selene's conclusion that "women don't come because they don't want to" glosses over deeper levels of gender imbalance. Simplistic is her notion that all one needs is to become informed through the internet or other media for one to gain access to higher education. Selene's emphasis on women's agency or "wanting to do it" demonstrates an inability to understand how systemic barriers present obstacles for women to access education. Her view that all that is needed for women to attend the CT is initiative and the qualifications to do so highlights the problem of equating equal access to equity. Nevertheless, Selene was not alone in her views.

None of the administrators interviewed considered the low numbers of women as a problem per se. Only one student recognized the low number of women professors and students as a critical issue of gender equity.

Daniel_S: There is no gender equity because of the numbers, 47 professors against 3 female professors, it is obvious, right? The same happens with students, for example, there were only 8 students at the masters level and only 1 woman (...) as there are very few women, [although] men treat them with respect.

In addition, one of the professors, Omar spoke about the number of women and elaborated upon why he thinks few women go to the CT. Omar cited sexual harassment as a

problem left unaddressed by the institute. Omar felt that these incidents relayed by former students potentially discouraged other women from studying at the centre.

There are not too many women here, and some of the women who leave, go to the program next door, or they are working there, or something, some of those former students..., they will not recommend coming here.

Although most participants described gender equity basically in terms of access, administrators did not recognize that there might be a problem with access based on the small number of women working in the institute. Only one student and one professor discussed the situation as a potential problem. One professor also mentioned that sexual harassment might be a cause for the low number of female students working at the institute.

Unchallenged stereotypes

Although there are policies and initiatives in favour of gender equity and a safe environment, certain sexist thoughts and behaviours remain unchallenged. In this section, I discussed how participants consider certain stereotypes as starting assumptions in the relations between women and men. Later in this discussion, I focus my attention on Gerardo because he insisted on unsettling my position as implicitly pro-gender equity in the interview.

Omar_P expressed his feelings and understanding of how women students participate in the academy. He said that “*in Mexico they [women] usually flirt with the professor in exchange for an academic favour.*” This view of women as sexual objects already inserts students in a discourse of unequal relations and gender bias. For Omar, women achieve by relying on their bodies to sway professors. They do not seem to be capable of intellectual achievement without pursuing professors; his sexist understanding of women seems unchallenged by gender equity discourse and policy.

Drawing upon a similar sexist logic, a female participant stated that males harass females by nature, suggesting that men have no responsibility for their acts or behaviours. For her, it is a woman's obligations to stop men when men go too far.

Susana_S: Speaking about my classmates, well, they are men. As men, you know, hormones, instincts, I've seen it and it is all about their natural instinct and how they like conquering women. Men always feel attracted to women. They will always forget about their roles as classmates, supervisors or you name it, they are only looking for a chance.

Participants' attributing the nature and behaviour of males and female to essential biological and culture positions on gender present significant obstacles to the gender equity policy. Without targeting these views the gender equity policy remains suspended in attitudes and assumptions that pose a threat to equity. Complicating this finding was the fact that gender equity did not seem to be a desirable goal for some people. For example, one of the administrators interpreted gender equity as a reactive politics and so stated that it was risky to have women in certain positions.

Jose_A: It [gender equity] is a myth (...). I think it is a myth because the word equity is understood as revenge. If a woman takes over a position she will think this is her chance to do anything that she has never been allowed before.

A professor also described how TV and/or feminism portray a bizarre concept of modern woman. He criticises the idea of women behaving as men but has little problem with the behaviour of men in the first place.

Pedro_P: To be a modern woman, she has to have a husband and 20 lovers, and treat her husband awfully. That is the message portrayed in TV ... that seems to be the message of feminism. Totally misinterpreted, right? Something like I am a feminist and I am going to sleep with 20, just like men do. That is a myth, as a man, I wish that was true.

Both these examples illustrate how pervasive are participants' existing views on women. Jose views equity as potentially a way for women to seek out revenge on men. Pedro portrays how gender and gender politics is much bigger than what has been described as gender equity, access. He blames feminism or women's drive for equity and modernization to negatively affect the gender relations of men and women rather than promoting more equal relations and opportunities between them. In these and other moments external patriarchal discourses shaped my participants' view of gender equity within the confines of specific policies and practices at CT. However, what remains clear with Pedro's quote, is that where men and women are essentialized, gender equity is perceived as disadvantaging the more capable sex, men.

But even for individuals who do not view women in deficit terms and feminism as flawed, there is an ongoing challenge to cope with the male-dominated environment. Janette is one of the three female professors in the centre. In her interview, she recognized how she had to deal with sexist jokes during her studies in the IPN and as a professor. She described them as a normal activity in the Centre.

Janette_P: I make no distinctions between women and men with my students. I work in the institute and let's face it; it is an environment for men. This usually happens in the science and engineering fields, I mean you have to learn how to live with double meaning jokes. At this point, those jokes do not bug me anymore; I have learnt how to behave in this environment as well.

Rather than look to the equity policy for intervention Janette indicates that women must develop the resources and capacities to survive a sometimes inhospitable work environment. Janette seems to accept that her field is male dominated and if women decide to enter, they need to adopt a specific way to behave in accordance to the culture of men. The culture of men, according to Janette, means tolerating sexist jokes and innuendo. The

acceptance of a hyper masculine work environment on the part of Janette indicates that she has deeply internalized gendered expectations set out by the men in the faculty. Hence, Janette does not resist sexist and demeaning treatment.

Gerardo, a professor, was a peculiar participant in the sense that he tried to direct the interview by projecting his own questions and interrogating the structure and the content of my interview. I focus on his interview as it illuminates well some of the conflicted stances possessed by some professors in regard to the mandate of the gender equity policy to ensure and protect gender equality in the institute. Gerardo insisted on being seen as interested in my study and on being interviewed and yet, he demonstrated anxiety about gender equity by contesting the policy and by questioning my own positions on gender equity. For the most part, his questions seemed to be directed towards rationalizing the necessity of male dominance over women or of the problem of treating women and men the same. During the interview, he introduced real or hypothetical examples to portray his anxiety. For example, he likened working within the academic to a penitentiary, with women and men housed together as inmates. Then, he asked: “*Would you support this? Is this a good idea?*” challenging me to respond to the unlikely comparison. At another moment, perhaps projecting his own identity as a misunderstood, but intellectually superior professor, he invoked a case where a famous scientist outwitted students who had accused the professor of being sexist. Feeling continually derailed in terms of my interview protocol, I politely attempted to reorient the discussion to my original questions. However, he kept insisting that as an expert on “gender equity” I needed to answer his questions. As he pressed on, I began to feel as if I was the subject of the interview. Still, Gerardo proved to be an important informant in terms of understanding the intensity and modes of resistance to gender equity circulating in places such as the CT.

Gerardo tried to demonstrate an understanding of gender and women in the interview. Indeed, Gerardo went to great lengths to show his interest in the topic of gender equity in his interviews. In the public discussion emerging from the Gender Equity project intervention, he spent most of his time describing scenarios of the negative outcomes of gender equity and of affirmative action. For example, as a negative outcome of gender equity, he described a situation in the subway.

In the subway there are cars for women and for men. But if I happen to go with my daughter, niece, whatever! We all have to go in the mixed car because of the other women, these women do not say, stay in the women's car because of the woman I'm accompanying, what is wrong?! Aren't they friends? Aren't they supposed to defend each other? Why do they want this other woman to go in a different car just because I am with her? What do you say?

He also described a hypothetical situation where there might be a job offer for women and men where women would have an advantage through equity policies.

So, if one wants gender equity, wait! But why? If there are only two women, and we have 35 men waiting, why do I have to open a position for a woman? I don't know your position, but I would like to hear you.

These somewhat over-determined examples expose a deep anxiety on the part of Gerardo to accept gender equity as a normalized mechanism of equality in the university. By creating incredible scenarios to show that equity cannot work Gerardo appears to be experiencing conceptual difficulties accepting the policy. As well the latter example may well have been addressing his discomfort with the presence of the current director of the institution discussed earlier.

In addition, Gerardo talked about how women behave among themselves and how they cause their own problems; again suggestive of the deeper levels of hyper masculine

gender ideology in Mexico. To demonstrate his point, he made the distinction between “mujeres” and “viejas,” but went on to focus on the “viejas.”

There are mujeres [women] and viejas [disrespectful name for women]. Just like that. I admire how a vieja can bitch about another vieja and when that other vieja shows up; they both talk and kiss each other as good friends (...). Please, teach me how to give that kiss!

In Gerardo’s patronizing discourse of women, he blames women as the cause of their own lack of equality. In a way, perhaps Gerardo was also reacting at times badly to my questions as a way to voice his concerns with the gender equity policy. It seemed that he understood my position, not as a researcher, but as a Mexican female graduate student and tried to interrogate me. He seemed to want me to agree with his notion that women not receive special treatment in terms of hiring and that women are to blame for their difficulties with each other and with men. Gerardo was a complex participant who demonstrated an interest in and rejection of gender equity. At the same time, he showed his anxiety towards having equity for women in society because of their inferiority. He stated that because women were not capable enough to achieve certain positions, their access has only been possible with the establishment of policies.

Throughout all the interviews, participants showed signs of having deeply internalized gender stereotypes that deserve educational attention and intervention. Although participants seem to understand that women have the same rights as men, they failed to challenge gendered societal roles and practices because of their cultural entrenched normality in the interactions of women and men. Participants did not view the assumptions they held on the highly gendered roles of men and women as problematic. Instead many participants found the gender equity policy problematic or flawed for not understanding the

“true” natures of men and women and how “nature” rather than sexism or systemic barriers to education affects the success of men and the failure of women in the university.

Practicing Denunciation

Apart from access and unchallenged stereotypes, participants stated that denunciation was not practiced at the IPN. There was information supporting denunciation (like the violence ruler); but, at the same time, there were factors obstructing it. Arturo_A described the two problems with denunciation for women. On the one hand, he described the professors’ authority, connections and experiences in the institute.

There are factors that obstruct denunciation. Female students are usually afraid of professors’ reprisals. As professors have been around in the institute for long, they know how things work. In a different program of the IPN, I heard a rumour that a professor had said something like: if you accuse me or do something, you can be sure that you won’t pass my subject, I know all the professors who teach this subject and we are all good friends. So, if you accuse me, you are not going to finish your degree. Threats like that.

On the other hand, he described how women do not want people to know they have been molested.

Also, women are afraid to denunciate, because the community will know about their case, and they don’t want people to know, I mean, they don’t want people to recognize them as being harassed.

In other words, Arturo does not think that denunciation is an easy task for women. In addition to the personal risks that women may face if they denunciate, they have to consider the institutional barriers. Omar described the way procedures seem to be working in favor of perpetrators. For him, the procedure is complicated and requires long time frames and commitment; these requirements may force students to drop their accusations after a while. Arturo also commented on the

problems with denunciation. Although he did not specifically talk about gender in his example, he gave me an example of how difficult it is to provide evidence. In one occasion, he tried to report a professor selling grades.

It was extremely complicated to follow up that case. People hide! A professor sent a student to record another professor. When we tried to denunciate it, the lawyer of the office said that the recording was not enough! If one is denunciating, an expert has to say that the voice belongs to that other person; and even when the expert said it does, the accused may argue that he was joking. And something similar happens when it comes to harassment. At the end, people realize that things are not that easy, maybe, students know that another person tried to denunciate and nothing happened at the end, why bother?

As with Arturo, Omar also talked about the institutional barriers for denunciation.

[For a denunciation] two witnesses are needed, who saw the situation, neither of them should have any prior relationship with any of the parties, those are the requirements. Thus, it has to be someone who is walking by the street who happened to be there and wants to testify. It is almost impossible! In addition, they [Gender Office people] have to investigate, review, verify. They never talk about psychological tests or things like that Time goes by and the student needs to find a committee, graduate The problem continues with other students.

In theory, then the IPN supports denunciation through the Gender Office. However, participants recognized that denunciation is not always a possibility based on the risks, time, and requirements. These participants also exposed that the Gender Office might need to support individuals through the process in a timely and safe manner. For them, the procedure for denunciating is so complicated that, at times, it seems to work in favor of the accused.

Homophobia

Although sexual orientation was not a focus of the interviews or symposium, it came up in one interview and in the discussion after one symposium. While one professor agreed that there should not be any discrimination for students based on their sexual preferences, two professors seemed unable to tolerate homosexuals and the presence of gay students in the university. Victor_A stated *“In a Mexican society, we are not completely able to accept them. We are not convinced about having homosexuals showing openly their feelings.”* Another professor recognized that he had had two homosexual students, a woman and a man but he only criticized the male student and his tendencies to behave like a woman. Based on his experiences with this student, Omar made generalization on the character of all male homosexuals:

For example, with homosexuals, I have had the problem that they want to impose their sexual preferences, they want to flirt with the professor without paying attention in the classroom, it is very uncomfortable.

Omar also commented that it was challenging for him to teach homosexuals and he requested receiving some sort of training for dealing with *“these people.”* As he proceeded with his description, he described openly what he dislikes about male homosexuals—feminine expressions. Omar’s disclosure shows that the equity policy brings exposure to intersections of sexual orientation and this new, and deeply contested social terrain, gives the institution trouble beyond the heterosexual male-female binary.

When participants describe gender equity in terms of access, they fail to recognize that access is just one part of how gender enables and constrains participation across the whole spectrum or one’s life trajectory. At the same time, they fail to see gender equity as supporting and addressing the situations of all marginalized populations such as gays and

lesbians. The participants in this project manifested contradictions in their statements when it came to the practice of equity for those who are not part of the heterosexist, hyper masculine normative male population. Others can be included only if they learn to conform to the norms of behaviour dictated by the male-dominated culture. Evidently, gender equity in the CT remains in the beginning stages, and even concrete measures, such as protocols for denunciation, remain under-utilized. I now turn more directly to an analysis of my primary informants' views on how gender discrimination and gender equity is understood and negotiated.

Reported experiences of graduate students: 'the good, the bad, and the ugly'

The IPN appears to be using graduate women students as a litmus test for how gender equity is enacted. This research showed a number of findings related to women graduate students' experiences in a male-dominated field, which range from the good, to the bad, to the ugly in the Centre of Technology. The good include women's success in accessing the program and articulate how women participate and even thrive in male dominated fields of study. The bad refers to the challenges and discrimination these students face as women in the institute. The ugly focus on specific reports of individual abuse and sexual harassment. The findings under these categories are elaborated below and represent how women understand and negotiate gender, gender discrimination and gender equity initiatives in the context of their participation in the program.

The good.

The five women graduate students I interviewed are already "success stories" in that they have been able to access and maintain participation in this prestigious male-dominated, research-intensive graduate program. They generally come from middle-class backgrounds with the privilege of having the program in their city. They clearly do not

represent most women in Mexico who would be excluded from the CT from the earliest years of their upbringing and schooling. The majority of women students interviewed were positive about the support they received from their families and supervisors, and appreciative of some of the rewards they have obtained through their studies. However, they mentioned certain challenges that were not described in bad or ugly terms, but ones that they have overcome in their journey through the program.

Participants found that their families played a paramount role in their access to, or support in, graduate education. If not directly, these women commented that their families supported their decisions to access higher levels of education and helped them throughout the program. For example, Teresa did not know what to study when she completed high school, but she found guidance in her extended family to select the field:

The field, well, it was very difficult for me. My dad is a physician so I wanted to be one too. As a child I wanted to be an archaeologist because my aunt is one and I wanted to follow her steps (...) I wanted to be so many things! So I went through a period of not knowing what to do when I had to decide. I remember that some of my aunts talked to me and said that technology was what made money and if I wanted to help my parents... well, that was a strong argument, I wanted to help my parents. That is why I picked this field, to help my parents.

Teresa described how her family and economic incentives convinced her to enter the field of technology. Also, she stressed the importance of having an intellectual woman role model. Teresa and Alicia still lived with their parents, which meant that they didn't have to worry about the responsibilities of maintaining a home and a family while they were studying at the CT.

As with Teresa, Alicia also mentioned the support that she received from her family while in the program:

About support, my family has always supported me when it is about academic stuff. ... I live with my family and it is as if I was still in my BA because I go to school and come back only for dinner. There are not too many changes. My responsibilities are to clean up my room, do my laundry, things that are mine. My mom usually does what is a shared thing.

For both of these women family support plays a critical role in their success at the institute.

Susana wanted to continue her education but she did not want to move away from her home town because of her family ties. Although her family seemed to pull her back, she did not see it that way; for her, they were supportive in her work. She argued that she was not confident enough to leave them as a single unmarried woman. It was not until Susana got married that she decided to move away and pursue graduate education:

I wasn't brave enough until I got married. My husband is from Mexico City. He said well there are graduate programs in the City, let's move there... but I had to review this idea since I didn't want to leave my home. At first, I was afraid to go out by myself! My husband supported the idea of applying for further education.

For Susana, support from her husband gave her the confidence to pursue higher studies.

Awards and scholarships also made it possible for some of the participants to succeed in the institute. In terms of rewards, Teresa made reference to the economic scholarship that she got from the Mexican government and Susana described the pleasure she had of publishing two articles and the pride of showing her previous supervisor her academic awards.

Teresa_S: I knew I was going to have a scholarship from CONACyT. That is the most important one; it gives you more money than the others. So I was not worried about money.

Susana_S: I have published two articles, because I am a hard working woman, a woman with a strong will.

Teresa and Susana also commented about their current supervisors and how happy they were with them because their new supervisors had been supportive and helpful academically. On the other hand, Olga described how helpful the school and her friends had been in terms of language. Although she did not speak Spanish when she wrote her entrance exam, the school and professors had been flexible enough to accommodate her language needs. Olga_S stated:

Well... I didn't even speak Spanish! But at first my friends accompanied me and translated for me. I even had the entrance exam in English.

In terms of rewarding challenges, Mercedes commented that the work load is extensive enough to spend a few nights in the institution, but she demonstrated pleasure in persevering to finish on time.

Mercedes_S: Sometimes there is so much work at the end of the term, deadlines, things didn't work in certain ways, and so forth. I have had to spend a few nights here to finish the work. Like I arrive on a Monday and I don't leave until Wednesday! But I finish.

Each of these student participants indicated that support from family and faculty greatly supported their drive to succeed and finish their studies in the institute despite a heavy work-load and demanding program. The women also demonstrated a certain amount of confidence and pleasure which self-supported their abilities to succeed.

The bad.

In contrast to the favourable remarks concerning supervision and support, the women students also admitted facing challenges in supervision. In addition, they felt discriminated against as potential mothers (pregnancy issues) and lack of trust in their abilities as female.

Criticism was also directed to pervasive gender stereotypes, and how these gender problems remain unchallenged in the CT.

Teresa and Susana explained that their previous professor/supervisor had an immense control over them and their classmates. Coincidentally, they both described him (seemed to be referring to the same person) as a *professor* working in the field of technology who knows how the human mind works and may be in a position of advantage to control other people because of his particular background in this institution. For example, he prohibited them from being seen in the aisles and talking to anyone in the building, except for him. Although Susana is a married woman with a settled life, she tried to work within his requirements. She explained: *“He prohibited us from talking to people in the school, mingling with others, or approaching anyone at the centre.”*

Similarly, Teresa spoke about not being able to talk to anybody in the building because her supervisor prohibited it. However, as her boyfriend was in the same program in a different cohort, she used to meet with him to discuss a topic, a problem or a project. Her meetings became problematic since her supervisor disapproved of that relationship.

When Susana was pregnant, her (previous) supervisor removed what she had earned academically (an internship and a conference trip), because he had little trust in her abilities to finish on time. However, she remembered how the baby and her pregnancy inspired her to work harder and finish her academic duties before time. Perhaps, subconsciously, Susana wanted to demonstrate to her supervisor that pregnancy did not diminish her capacity to think and work.

I was supposed to attend a congress and an internship out of the country. When he found out that I was pregnant, my supervisor suspended me. According to his

experience, he knew I was useless as a student Later, he had to admit that even when I was pregnant, my brain was still working.

Teresa, Alicia and Susana made comments about how, as women, they had to work harder than men to prove they were good at what they do. When they succeeded in their endeavour, professors questioned the authorship of their work. In terms of intelligence, both Teresa and Alicia complained about the lack of trust from some professors who did not believe in their work or their academic abilities. They explained how professors believed that others (male students) were doing assignments, as if they, as women, were not competent. Alicia disclosed:

One of the professors insinuated that I had my work done, like if someone else was doing my assignments. This professor even approached one of my closest male friends and he scolded both of us for that. The professor requested him directly not to do my assignments anymore.

Similarly, Teresa recalled one occasion when she noticed that a member of her committee had had the opportunity to question her in private, but he waited until the day of the exam to allege that she did not do the job and did this in the presence of her supervisor. She also complained about the pressure to work at her best all the time.

As a woman, they don't believe in you. They think that your boyfriend does everything for you. They think that your supervisor In a way they just don't believe that you are doing anything or that you are working to obtain the results; for many of them you don't do enough. I feel that that is much more pressure for us [women] than for men, because they definitely don't think that women can do it, and you have to do your best or work even a lot harder to prove them wrong. It is difficult.

As with the female professor Janette, Susana described differences in actions as caused by the need for women to adapt natural and differences between the capacities of males and females.

I think that anyone, women or men, can develop their abilities here [in school]. But it requires an effort, like I have noticed that guys do not refrain from speaking in front of a woman. Men do as it pleases to them. If a woman wants respect she has to say it. Men are who they are by nature. If one wants peace in the school, we have to adapt to them.

Susana explained how gender is played out in the CT: while women have to work harder and earn respect, men only have to be themselves. For women, maintaining peace means not saying anything at times.

Each of these cases demonstrates how women experience routinely negative treatment by their professors and supervisors. The experiences range from their behaviour being controlled by male faculty to being told that they were intellectually inferior if they chose to become mothers while studying. In many cases women felt that they had to tolerate these practices and attitudes or demonstrate that they were more than capable of succeeding in the program. Many of participants silently accepted the sexist treatment they received by male faculty as an accepted and natural aspect of male/female relations in the institution. Although women were aware of inequitable and demeaning treatment in most cases, they remained silent choosing to work hard and succeed as a way to resist the at times blatant sexist practices of male faculty.

The ugly.

In this section I discuss the differing, but partly interlinked stories of four of the five participants I interviewed. During their interviews, these four students complained about their experiences in the CT and discussed how they have evolved. They also discussed how they responded to certain uncomfortable situations and how, as women, they have been controlled by the male faculty at the institute.

Teresa. Teresa had a boyfriend studying in the same field as her. By the time she completed her BA, he was starting his graduate education. As time went by, it was common for her to visit her boyfriend at his office after her coursework had finished. That is how she met one of his professors who seemed very friendly and knowledgeable at that time. The professor invited her to audit his course and she agreed to do so.

When she decided to continue her education into graduate school, this professor was her first choice because of her field of interest and his friendly personality. However, her boyfriend warned her that this professor cursed and used inappropriate vocabulary while in class. Teresa hesitated to believe such affirmations because the professor was approachable and kind to her; after all, she said: “*he was a professor*”. For Teresa, the fact that he was a *professor* was a reason to believe that he knew how to treat students and establish a good relationship. She remembered that when she joined the program, she enjoyed being in the lab, spending some time in the library by herself, dropping by her boyfriend’s office to discuss a project, an academic problem, or themes related to her work; she enjoyed being at school.

Things started to change as she continued her relationship with her boyfriend. The professor/supervisor made it clear that he did not want her to speak with anybody in the building, including her boyfriend. At the same time, he stated the need to meet with her to discuss academic topics at least once a day. The idea seemed beneficial because she expected, as he had said, to have academic discussions about her work. However, after a few daily meetings, Teresa realized that these meetings were not useful and not about her studies.

... we spent over two hours talking nonsense and nothing important for my thesis. It was a waste of time! So, I decided to work hard to generate specific questions and

focus our meetings on these questions. I decided to stop dropping by his office and saw him only when I had at least 5 questions to discuss. Once there, he answered my questions and then he used to say, "not everything is about school. As a youngster, you have various personal doubts and as you spend most of the day here without your parents. Well, I am here for you as your friend.

This professor questionably portrayed himself as a friend who could help her under any circumstance. As the professor/supervisor, he realized how academically ambitious Teresa was and he asked her to be the chief of one of the labs. At that time, she was suspicious of this move because students could not work as chiefs of any labs. She also noted that the professor/supervisor started making inappropriate comments towards other female students, like inviting them out or to his home. These comments made the female students uncomfortable, while the rest of the group (male students) found the situation amusing.

Teresa's problems developed when she refused to visit her supervisor every day and continued with her relationship with her boyfriend. The supervisor insisted on her being in her office all the time, so that when he decided to drop by, she was there. Teresa reveals:

The professor became more and more upset with me because I was kind of a rebel because I didn't meet with him. I continued my relationship with my boyfriend, etc. One day he said, come and see me after class. Once there he said: sometimes parents do not say anything, because we are their children. But there are a few things like when you are having your period, your breasts grow. Perhaps your mom did not mention it, but you should buy larger bras for these days. I was wearing a tight shirt and I am a bit chubby But I was covering my shirt with my jacket and never took it off.

The next thing she remembered was how the professor/supervisor asked her to give a presentation about her work so that he could belittle her in front of her classmates. Teresa recalls:

After I finished my presentation, he asked his favourite student, what are your comments? This student made some comments about my presentation, like this and that is good; but that is missing and so on. Then the professor/supervisor said, yes, but what else? Something deeper, not only about her presentation today. He was pushing my classmates to find something wrong not only about my presentation. Is she a person who is in the lab or in her office? Where is she sometimes? What does she have to do? It was then when this student said, uh! She has to work harder, stop wasting her time, things like that. He was focussing his attention on something completely different. Then they knew what this professor wanted to hear. They all criticized that about me. Instead of focussing on my work, they talked about my relationship, the time I spent with my boyfriend, that I didn't work enough, things that had nothing to do with the presentation. This professor pushed them to say things like that, when I tried to respond, he silenced me: you can't talk! Curiously, everybody agreed that I had to break up with my boyfriend, that was exactly what this professor wanted, he hated that I spent time with him.

As Teresa had challenged the power of the professor by continuing her relationship with her boyfriend and avoided meeting with him, the professor arranged a situation to put Teresa on the spot. He directed his students to push her into breaking up her relationship; while at the same time, he demonstrated his power over her by silencing her. He also seemed to wield much power over the students who participated in his maltreatment of Teresa in the classroom space. Gender equity relationships between teachers-students, in this context, seem to be a challenge because of the authority that professors in general have in the CT.

Teresa also described how this professor/supervisor made references to his own sexual relationships with women and their clothing during class. One day, after talking about certain women and virginity, he turned to Teresa and asked her if she was a virgin. Teresa could not believe what she was hearing.

I froze! The worst was that none of my classmates said anything. They just continued with the talk as if nothing had happened. I was furious, mad, angry, sad... that was it! I decided to go to his office. I made it clear that he had no complaints about me as a student, I worked hard enough to please all his academic requests and I requested him to stop messing with my life. Then he had the nerve to respond. He asked me to collect all my belongings, return my keys, and take some time off. In a way he was kicking me out of the program.

Teresa broke into pieces after this conversation. She was afraid of speaking up because according to her, no one would believe in her. The worst aspect for her was that all her dreams of making her parents happy with her studies were falling into pieces. She felt betrayed and desperate: *“I worked hard enough to give him anything he wanted the day he wanted, if I had to present, I did it. All that work...I was frustrated and desperate.”*

She was particularly vulnerable because this professor was her supervisor and a course instructor. She was not sure what to do next, but she remembered that her first option was talking to one of the women in charge of the students’ paper work. She did not have the intention of filling a complaint, but Teresa wanted to receive some advice because she feared reprisals against her.

Teresa_S: When I arrived, I sat down in front of her and tried to explain, but my tears came up first. It was a hard situation, but she stopped me right there. She said that she had been through the same and women had to deal with such things. Stop crying she said. She helped me by registering my grades to avoid him changing them. Her attitude was rough, but helpful.

Teresa also discussed discrimination beyond the relationship with her supervisor. She commented that the environment in the CT was charged because of the way professors looked at some women. According to her experience, professors looked at students first as women and then as students. She explained: *“they look at you from the top down; it is very*

common to see such things in the institute. They see how you are dressed, it is very uncomfortable.”

She also described another professor. As far as she knew, he was dating another female student, but began approaching Teresa. At first, he made conversations, casual kisses, he also commented on her beauty and skin tone. One day, he went to her office and told her that he was her biggest fan. From that time on, she was more careful to be less visible in the Centre:

Teresa_S: It was very unpleasant! Every time I saw him I tried to avoid him. I hid from people and even going to the washroom became an odyssey I am not happy when I am in the building. I would rather be locked in my office without seeing anybody or leaving my own space.

In terms of filling out a complaint at the Gender Equity Office, Teresa disregarded such a possibility because of the way the woman in the CT treated her when she previously spoke up. Her new supervisor also knew about her situation and he encouraged her to talk with the director. When she did, the director kept working on his duties and ignored her. Since then, she tried to keep a low profile.

Clearly Teresa’s troubling experiences with the male faculty in the institute points to the failures of the gender equity policy to ensure a safe learning environment for students, principally, in terms of sexual harassment and other forms of gender violence. In addition, her story reveals how some women are viewed as female bodies rather than human beings and academics capable of intellectual contributions to the institute. More disturbing is the acceptance of the mistreatment of women by other students and faculty and even by the women who experienced this violence first hand. The fact that Teresa felt helpless to

grieve her situation with her supervisor for fear of reprisal also attests to the ineffective implementation of the gender equity policy at the moment.

Olga. Olga described herself as different and exotic because she is a blond foreigner. She did not know the language or the way of life when she arrived in Mexico. For that reason, she had to trust her friends to help her move around the city and asked them all sorts of questions ranging from food to health services. She met her friends in her native country while they were students. They are now foreign professors at the CT. At first, her friends had to accompany her because of the language barriers. One day, she was talking with one of these friends about where to go shopping. Then, another professor showed up and her friend introduced him to her.

Olga_S: I asked my friend right in front of that professor where to buy cheap glasses. At that moment, he offered me a ride to a mall with a good store; so we went and I dropped by that store for the glasses. Then we went for a bite to a nearby restaurant. Once there and out of nowhere he proposed that I live with him. Something like I have seen you around, let's live together, I can help you with your thesis and everything else.

She tried to respond to his offer matter of factly, although she was taken aback. She reveals “it was really surprising because he didn't know me!” She refused his request and was unsure what to do next. In the end, she decided to talk about it to her friends. Olga filled in the potential effects of her encounter:

I think he wanted to harm me because later, he wanted to be part of my committee. I know that he is in a position of power and he wanted to make some changes. Luckily, my friends are powerful too. These friends knew about him and they told me that there was a former student from my country before in the program. He became part of her committee and he failed her; she could not finish the program... I can only assume and guess. I understood according to what my friends said that I wasn't the first case, and my friends tried to protect me.

Olga continued explaining that it was a good thing that she talked about it to her friends. She intuitively knew that professors may want to fail students because they refuse to do what they want. However, Olga recognized that speaking up was helpful for her because this professor then left her alone; she suspected that her friends interfered in her favour as well. In the end, at least, she revealed she came out fine.

After this happened, I felt unhappy at the university, I didn't even want to see him; but I had to make an effort, we are in the same school, same field, I learnt how to say 'hi.'

Olga also disclosed her knowledge of another female student who had similar problems with her supervisor. That female student had to drop him as her supervisor because there was some dispute between them; quickly after that, she found another supervisor. When Olga commented about her friend's situation to her supervisor (one of her friends) and he said, "*uh, that is not rare, he always shows a lot of interest in women only.*" Olga concluded that the professor's interest in women had nothing to do with their academic development. Olga's experiences illuminate how gender violence operates at the CT between some male professors and some female students. Olga could navigate though a difficult situation with a professor by having the support from other professors rather than the gender equity policy.

Alicia. Alicia tried to greet most of the people in the Centre of Technology including one of the professors with whom her supervisor had problems. Although she was aware of this professor's problems, she felt attracted to him because he offered academic guidance. Alicia recognized that her supervisor did not guide her academically; for her, a PhD student colleague was her supervisor.

This professor was working in a related field and he insisted on us talking. He and my supervisor had a very bad relationship. But he tried to talk about my thesis, my

project, my work, he sort of showed some interest in my work. At that point I was more comfortable with him.

She continued describing how after some informal conversations, the professor invited her to his office for a more formal talk about her work.

He suggested meeting in his office and then it happened. He approached me and tried to kiss me on my mouth. Since then, I tried to avoid him. That professor made comments on my beauty and used to say hi, now I limit myself to a plain 'hi.'

Despite pulling back, the professor made further advances. For example Alicia stated, “Another day, I was with my friends and he approached me. He tried to touch my arm, but when I realized it, I moved quickly by my friends’ side to avoid it.”

Shaken by her experience, Alicia insisted that I conduct our interview outside of CT. She was wary and nervous to be seen in the building speaking to me. For Alicia, the situation had been very stressful and she did not feel comfortable or safe at the institute. She went to the institute only as often as needed and if she happened to go, she was sure to be accompanied by one of her male classmates at all times. Her academic work was constrained by what she could do by herself in her office or at home.

Alicia sent two emails to the Gender Equity Program reporting the entire situation with names, dates and a description. At the time of the interview, it had been over a year, since she sent the e-mails; however she had not heard any responses from her emails, and she does not expect to receive any response.

Alicia also said that she has heard about at least two other cases similar to her own, but one did not want to talk for fear of reprisals and the lack of response from the authorities. She described her relationship with her classmates as normal, while at the same time, she conceived “*the traditional undressing looks*” to be normal.

Although Alicia reported a sexual misconduct and intimidation at the hands of her professor, the Gender Office failed to respond to Alicia. She came to realize that sexual mistreatment of female students is somewhat normalized in the institution. Also significant is Alicia's feelings of fear and lack of safety in an educational institute. Her story indicates that some women subject to gender violence are made to bear feelings of intimidation and fear throughout their educational experience at the CT.

Susana. When I arrived with this doctor [professor], he put things very nicely, like we were going to work hard, he was going to support my work and everything good. But as days passed by, he started to change his behaviour towards me, my classmates and the volunteers. The thing is that he is a waste and he hurt me a lot. I got sick a lot of times. He offended me and made me waste my time. I even had to finish my PhD in a year and a half because the school was not interested in hearing my stories and complaints.

In her account, Susana showed visible signs of anger, frustration as well as pride in herself while she described a certain professor who used to be her supervisor. She described him as “a very intelligent professor who knew how to control his students.” During the interview Susana recalled his mode of relating to many of the female graduate students:

After he cursed, called us jerks and useless, he touched our legs and said something like sweetie there is nothing wrong. In class, he commented on sexual topics, used vulgar words, and he even called us prostitutes. Nobody knew how to respond! He talked about sex and asked [us] for our opinion. I kept my mouth shut because I am a lady.

Susana recalled one occasion when she and her classmates, also his students, attended a congress in Acapulco.

When we came back, he wanted to see our pictures of us in bikini. He made comments about the bikinis and forced my classmates to give him a copy of the pictures. He is an old shark who harasses young women.

Susana explained that she was one of only two women students in the class. In class, Susana stated: “*we were both called prostitutes.*” The other student dropped out. Susana went to the director to complain and explained:

When I talked to the director about my case, I asked him, how did he expect her [the female student who dropped out] to come back? From my point of view [Susana’s] I am pleased and glad that she had left and please, do not ever come back. I really understand her. You know, I am like the phoenix. I was reborn from the ashes. I had really good reasons for never coming back, but I said to myself this man won’t defeat me and I demonstrated to him who I am.

For Susana, the mistreatment she faced at the hands of the professor was reason enough to drop out of school. She sympathized with the women who made such a decision. In her account, she described how she felt devastated, but how, the incident also tapped into her strong will, determination and resistance to continue. Despite making the complaint, the director stated that nothing could be done in the CT because of the procedure, meaning that she lacked physical evidence.

Susana also commented that her group attended a congress in a private university nearby as judges. After spending almost the whole day there, she had to leave to take care of her daughter. For this action, she was punished by her supervisor. She states:

That was the worst! The next day he was pissed off and said I was a whore, just a Mrs. because I named my family in an academic setting. He was surprised that I didn’t talk about onions and tomatoes in front of everybody. From that day on, I was going to be named Mrs. Susana and the other student who had the same name Susana only to differentiate between the two of us. He even said that I had to deny my kid! That topped it. I told him that I would deny him first. If I am someone it is because of my daughter. Things went really bad since then.

After a year and a half of working with him, Susana decided to break the academic relationship; he threatened her with removing her from the scholarship program. She knew

that some professors and people working in the school supported him but she had made up her mind. Susana found that her previous relationship with other staff and faculty was negatively affected by her break with this professor/supervisor. After deciding to leave the supervisory relation, her previous good relationship with the secretaries in the Centre of Technology was no longer. People that were very helpful at the time when she began her program turned against her. Since she raised her voice against this professor/supervisor, things changed drastically:

Susana_S: 'that was not what I said, you misunderstood!' And I had to go again or I had to go with one of their superiors for help. But back when I was his student, they welcomed me, offered chocolates, sit here; now it is a plain "what do you want? I'm busy".

For Susana, rather than support her as a woman student, the school pushed her down and built barriers against her. She had some administrative problems that delayed her exams and felt pushed to fight against the people who worked in the school. She explained:

Nothing flowed the way it had to; I had to fight for everything. I have to say this again, it was his entire fault [crying]. It was so frustrating. Regulations have always interfered against me. Once I applied for a scholarship and I submitted my paperwork to this secretary. Imagine, I could not get the scholarship because according to the administration I didn't apply. Here I have the receipt; the secretary could only say that my papers got lost who knows how.

Susana was advised to take her situation before the Gender Equity Office and so she did; at the time of the interview, it had been over a year since she filed her complaint. Although she sent e-mails and filed a complaint in person, her complaint has yet to produce any results.

Susana_S: The gender office received my complaints by emails and I went in person. I still have their responses and they asked me to wait. Now, it seems that everything

was lost in that office. That program is also useless because I spoke, I exposed myself and nothing [happened].

Susana tried different means inside and outside the IPN to give her case a hearing; until the interview, only two female professors had supported her case. She was disappointed because there was no legal way to prove anything; potential witnesses do not want to testify for fear of reprisals.

Susana_S: My classmates won't testify for fear and future problems. He already failed two of them and they could not continue with their studies. I know that this professor threatened them in case they decide to speak up.

Susana did acknowledge that she had been supported by the last two directors, but they both agreed that there was nothing they could do. The new administration took the minimal action of limiting the alleged perpetrator's work; he is no longer allowed to assess anybody without another professor and was removed from being chief of one lab.

Although emboldened by her struggle, Susana felt disappointed that these infractions had been ongoing problems and had negatively impacted her participation in the program. She stated:

I have been told that I am not the first one, he has been doing these kinds of things for years, but nobody has spoken. The university is in debt to me. They owe me. I would have liked to enjoy my studies, more support from the institution, something. We were like zombies the first year and in fear... nobody noticed. How come? We could not speak with anybody. Nothing. I don't like being in school, I avoid going there as much as I can. If I have to go, I limit myself to what I have to do, and run away.

Susana's account begs the question of how this professor was able to carry on with these abuses without being disciplined by his colleagues or administration.

The process of complaining about her problems to her previous professor/supervisor provided some relief for Susana. She described her current supervisor and how happy she

was with him. But when she made the transfer, her new supervisor could not offer her a computer, so she had to share a room with another professor. Susana described the professor, married with daughters, as falling madly in love with her.

Susana_S: He wanted to drop everything for me; but I was clear to him, I am married. This time I saved emails and phone calls, everything just in case. No one is going to say that I am the one who flirted.

Susana's disturbing experience with the professor reveals the complicated process that female students can experience when attempting to intervene against gender violence perpetrated by male professors. Often, female students who are determined to complain do so at great price like bearing feelings of frustration, disappointment, humiliation and grief. When students do file complaints documenting serious infractions on the part of their male supervisors, the administration and the gender equity office at the CT too often fails to respond.

Compounding their capacity to report is the fact that female students have little support from their fellow students who also fear reprisal if they are to testify on a classmates behalf. Female students who make complaints do so often completely on their own and in doing so face further isolation from faculty and students working at the CT. Without 'evidence' and support from their peers and teachers many of the complaints that students make never become properly adjudicated.

Omar's report on an incident. Omar was working late in his office and he became disconcerted when one student arrived in shock asking for help.

Omar_P: One day, a student arrived at my office with her clothes ripped. She was complaining that two men had tried to rape her in the Centre of Technology. She wanted me to testify, but the only thing I could say was that she arrived at my office all stressed out, with marks on her arms and describe her clothes. She didn't want to

denunciate anyone because one of these men was a person with power in the CT along with the professor.

Susana, Alicia, Olga and Teresa described how they experienced sexual abuse, acts of gender-based punishments against them, how they (tried to) complained, and the lack of institutional response. These data portray acts of sexual control that are not consensual; even if there were some sort of miscommunication between the perpetrator and these students, the fact that the professor(s) challenged and punished students who resisted his (their) sexual advances is problematic. Moreover, if complaints at the equity office are on the decrease, these women's stories that highlight the lack of response from the Equity Office might explain why.

In sum, the culture of silence and intimidation at the CT seems to make it almost impossible for faculty or students to report these incidents without fear of reprisal from the professors and their close colleagues. The disturbing experiences of these women indicate that violations of male power and sexual abuse seem to be interpreted by the majority of faculty and students as a 'natural' aspect of gendered relations. In a sense, some of the male faculty seem to hold the view that women by virtue of being women deserve this kind of demeaning and at times, dehumanizing treatment. Rather than intervene in this dynamic, the administration and the Gender office seem helpless to respond effectively to complaints made by female students against their male professors.

Conclusion

Despite the gender equity policy framework, there is still ongoing discrimination that maintains a blurred environment where some equity and extreme inequity interact. On the one hand, gender equity is on the radar and some positive initiatives are emerging. On the

other hand, the male-oriented culture remains dominant and resistant to change. In sum, the CT involves a complex mix of supports for and obstacles to gender equity.

Participants in this study recognized initiatives that promoted gender equity in the CT; however, female students recognized the problems with such initiatives. For example, if the Gender Equity Office is now in place so that complaints and disciplinary actions are possible, the female participants in this study illustrated that at present, the office is ineffectual in preventing sexual discrimination and harassment. In addition, the Office promoted speaking out against violence; however, when students named and complained, they appeared to be ignored and/or dismissed. Perhaps, the process for dealing with complaints takes time.

Moreover, since gender equity is defined in terms of the access of women into the CT, that female access seems to work against gender equity policies. By having women in the CT, administrators avoid their responsibility to combat discrimination and harassment. For example, although there seems to be one main perpetrator who has caused the most egregious damage to many women over time, his actions are yet to be challenged, let alone punished. Other stories are also hidden behind the everyday lives of the women in the institution that can also be framed under the category of gender discrimination established in the IPN policies; however, as evidence in the data collected no action is taken to challenge such activities.

Despite the national and institutional gender policies, acts of sexual discrimination, harassment and assault have continued, at least up until the recent past, without the possibility of investigation or any sign of penalties. Without an acceptance of discrimination or abuse, it is likely that more egregious offenses could continue without penalty. Gender equity policies prevent, work against, and penalize the bad and ugly stories

articulated by Teresa, Susana, Olga and Alicia. However, no matter how ugly their stories can be, they are still ignored. The next Chapter discusses the implications of this analysis and its relations to past studies. It offers some recommendations for strengthening gender equity and for future research.

CHAPTER 6: CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Although there has been a noticeable change in the academic environment at the CT in terms of gender policies, a clear understanding of how these policies have been enacted, particularly from the perspective of a leading program in SE in Mexico, has not yet been established. This study has made a modest contribution to this lack of knowledge of how the gender equity policy is experienced by faculty and students at the CT. While this study aimed to understand the enactment of gender equity through the perceptions of the members of the CT, this investigation excluded the voices of many Mexican women who lacked the economic and social resources to even apply to the prestigious graduate program at CT. Moreover, I only interviewed a small sample of self-selected CT actors, while a number of other voices were excluded that might have shed more light on my object of study, such as students who applied but who were not accepted, students who have dropped out of the program, and even professors who were the alleged perpetrators of sexual discrimination or abuse. Nevertheless, I had enough data to examine the complexities and challenges of gender equity at CT as detailed in Chapter Five.

The previous Chapter highlighted a set of expressions of both the emergent gender equity policy and the CT members' views on gender equity. In focusing on the stories of five women graduate students, Chapter Five also outlined women's challenges in this male-dominated program. Their accounts range from having to deal with being seen as less competent students to bearing the brunt of overt form of sexual violence, discrimination and bullying. This Chapter discusses the implications of my analysis and draws connections to past research findings and theoretical framing.

Although there has been a significant change in the composition of higher education in terms of gender and the establishment of gender equity policies, my findings show small

signs of development but much cause for concern. My analysis reveals the role of external global forces in the local construction of gender policies in which the CT is immersed. In this respect, I argue that the advocacy for gender equity policies is not a voluntary initiative of the local administrators, professors or students. Rather, the local context of Graduate Education is caught up in international discourses and national policies of gender equity shaping the policy framework of the IPN. Further, there are also larger, societal forces involved in how local actors understand (and act) on gender (discrimination and equity). In particular, we can see feminine deficit and sexist thinking surfacing in some of the participants' narratives, which clearly come from beyond the specificities of the CT.

This concluding Chapter is divided into five sections. The first section addresses the gender equity interventions and practices in the IPN. The second section discusses the established status quo in the CT and the third section describes the gap that exists between policies, procedures and sanctions. The fourth section explains the elitism in higher education and, finally, the fifth section focuses on the students' personal attributes.

Gender Equity Interventions and Practices

The findings revealed that the IPN is gradually changing in terms of policies and gender practices. However, the participants' narratives illustrate that much of the policy remains symbolic and that much remains to be done in terms of the culture and practices of the CT. These participants provided insights into how gender equity policies succeed and fail at the CT.

Success.

The IPN is working towards enhancing a gender equity environment through major visible signs. The large institution, IPN, engages with national and transnational forces through the establishments of gender policies institutionally. Based on external forces, the

institutional policies aim principally to combat sexual discrimination and harassment as the only form of gender inequity (Mohanty, 2003). These institutional policies explicitly mandate actions to prevent, stop, and penalize any acts of sexual discrimination and harassment experienced among the members of the IPN.

Surrounded by gender equity policies, the IPN seems to work towards enhancing a safe environment for its female students and employees through large initiatives such as the gender program and parental leave. In contrast with O'Connor (2008) and Shackleton, Riordan and Simonis (2006) who found that higher education structures fail to support gender policies, the findings of this study revealed that the IPN efforts are making some changes within the institutional community.

Indeed, gender equity initiatives are on the radar in the IPN. For example, a gender office that promotes other initiatives within the same institution was established. Some of the initiatives promoted through the office have been critical in boosting an understanding of equity in terms of access and harassment while academic centres, like the CT, have to echo such initiatives. A few of these initiatives, such as the introduction of educational posters (violence ruler), seem to foster greater gender awareness among the participants of the CT and combat sexual discrimination and violence. The office also promotes workshops, conferences, and publishes and disseminates articles about women. Although the power of the gender office over academic institutions was evident, the connection with local problems, like the ones explained in Chapter 5, was unclear.

The participants in this study demonstrated a common understanding of gender equity defined in terms of open access, equal opportunities for academic development and an understanding of violence against women (based on the violence ruler). Gender or women's studies in other universities have been described as small programs in Mexico (Palomar

Verea, 2004). In contrast to these smaller programs, the IPN has promoted equity as a larger scale, institution wide effort. Consequently, the IPN policies have funding for initiatives and power for implementation, what Lingard and Rizvi describe as material policies (2010).

Failure.

According to the findings, the commitment of the IPN in combating harassment and discrimination is very critical to the success of the gender equity policies. However, this study's findings revealed that harassment and discrimination principally against female students remained unchallenged, for example, the cases of Teresa, Alicia and Susana demonstrate that complaints of sexual discrimination remain largely ignored.

The problem seems to be that, in implementing massive initiatives coming from outside, administrators overlook the importance of transforming the local culture and in developing local initiatives in favour of gender equity and against harassment. Additionally, professors admitted to not implementing any practices in the classroom because of their understanding of gender equity; thus, they do not try to challenge the culture either. Since access was taken for granted, neither administrators nor professors recognized the need for developing other types of strategies locally to address deeper and more complex processes of gender discrimination. This study revealed that a variety of factors, such as patriarchy, undermine the abilities of women, working at the CT and foster a chilly climate against them (Hall & Sandler, 1982). Gender equity in the CT has to go beyond the access of women into the program, and it has to deal with the male-dominated culture so that sexist jokes, harassment or discrimination are addressed.

Findings also suggest that participants repeated top-down equity rhetoric without a real change in their actions (as will be discussed in the next section concerning the status

quo). Like Morley (2005), I found that gender initiatives might not be enough to destroy and challenge practices informed by societal patriarchal logics. Mohanty (1991) contests that the “notion of gender or sexual difference or even patriarchy. . . can be applied universally and cross-culturally” (p. 51). Mohanty adds that massive initiatives against discrimination or harassment cannot work in the same way in every centre of the IPN. With Mohanty (1991), this study found that global discourses on equity produce different local tensions at CT than at any other university. The IPN policies, the same as Mexican policies, need to be responsive to how gender is performed and how women are sexualized and discriminated against in their own institution. Thus, the CT has to find local solutions based on understanding the specific ways in which women are conceived and marginalized in the Mexican context.

To sum up, although the IPN policies establish a framework for initiatives towards the promotion of gender equity, these policies have not yet produced substantive change for all the members of the CT, particularly for the most vulnerable in this context – female students. Despite the gender equity policies, participants lack any commitment to stop and penalize harassment. Thus, gender equity policies could be defined as merely symbolic (Lingard and Rizvi, 2010).

Status quo

The findings of this study suggest that despite the gender-equity-friendly policy at CT, the male-dominated culture at the CT remains unchallenged. Traditional gender practices organize the everyday encounters between women and men that support and maintain the status quo in terms of a masculine culture, unchallenged gender practices, dominant discourses, and control over students.

A masculinist culture is dominant at the CT. For example, professors seem to accept women in their classrooms or as supervisees; however, when professors were asked about the differences between male and female students, some professors described various negative stereotypical behaviour of women, like flirting, taking advantage of their beauty to obtain a high grade, family responsibilities and pregnancy as reasons given for women's academic struggles or failures. In other words, women were not so desirable as students because they were women. The feminine (gay) male was also a problem for, at least, Igor. Also, for most participants, a woman as a director at a national institute of technology while acting as evidence that gender equity existed in the IPN created some anxiety and resentment on the part of male faculty members. The idea of having a woman in power was still seen as problematic and awkward. For male administrators and professors, having men as directors was the norm; a woman director was seen by these administrators and professors as a manifestation of a (forced) gender equity policy and her competency remained questionable.

In terms of the unchallenged gendered practices, acts of invitations, sexual comments, undressing looks, jokes, forced kisses and rumours of rape remain tokenized, hidden, under-addressed and/or unaddressed within the CT. For example, Janette a female professor does not condemn or resist sexist jokes. On the contrary, she is part of the group that maintains a culture of sexism by covertly participating in it, by joking alongside other professors. If the female professor, who is in a position of power, does not challenge these situations, it would be more difficult for students to do it. In this sense, some female professors feel pressured to play into and thus uphold the dominant patriarchal culture. In addition, disturbing complaints and rumours revolve around a certain professor who has not yet been investigated or disciplined despite the policies against harassment.

Furthermore, dominant discourses in favour of gender equity and freedom of access came together in mutually sustaining ways to silence the less powerful and less privileged female students working at the CT. Despite policies having been established against harassment and discrimination, the way they are stipulated does not leave room for penalizing an offender, thus, denying justice to women (Spivak, 1988). When women asserted themselves to exercise their right to speak and raise their voices, they were academically threatened, censured, ignored and forgotten by administrators through loopholes or unrealistic conditions of the policies.

With respect to access, little attention was paid to the limited number of women in the field, where only a few highly skilled women are accepted in the CT. When it came to describing the reasons behind the poor representation of women, administrators and professors blamed women's own ambitions or lack of desires for their lack of representation and abilities in the field.

Selene_A: If there are not women it is because they don't want to, the doors are open for everyone who wants to apply and has the appropriate academic level. Thus, the CT seemed to take little responsibility in increasing or promoting the access of women to the centre. However, in response to the gender project in which I took part, a group of faculty and graduate students seemed to be interested in taking a local approach to working towards increasing the potential flow of women students into the CT and other SE programs.

Finally, the level of control that professors can impose over students deserves attention. Where professors can assert such control over who their students talk to and even forbid them from talking with other people in the CT, we have conditions rife for abuse and bullying. Although only two students made reference to this situation, it is troubling that

this situation was allowed without any signs of denunciation. Also, very troubling is the alleged participation of male classmates in the professor's alleged bullying of female students during classes. Brilliant and capable women are kept in isolation and, despite their formal attendance, invisible in the CT. The chilly gender equity environment at the CT forces women to lock themselves in their offices and to expend time perhaps in unnecessary academic activities (Dingel, 2006). Interestingly, even when these women proved their academic skills and found a way through graduate education, professors still expressed around their achievements and abilities (Beoku-Betts, 2006).

Some of these disturbing gender practices are intertwined also with stories from other students and professors, who argue in favour of gender equity and who, instead of challenging gender discrimination, overlook their colleagues' behaviour. Since professors look down upon the extreme actions of the few perpetrators, it seems that the less extreme sexist mentalities and forms of discrimination find shelter for the more egregious acts. This can be related to the violence ruler that specifies a certain action according to the level of the problem. My point here is not in favour of a zero-tolerance policy, but towards acknowledging the more subtle forms of sexism and prejudice that go unaddressed. Without recognition of daily and more insidious forms of gender discrimination, it becomes more difficult to punish the more damaging forms of gender abuse.

Findings suggest that within an institution that views itself as holding liberal values and having progressive policies, the practice of gender equity is complex. Gender discussion is promoted and enhanced as a component of the daily life of the IPN population; however, larger patriarchal relations and attitudes remain difficult to break. The acceptance of the traditional role of women, reinforced by sexist practices that are accepted

as the norm, continue with little interrogation into the appropriateness of these practices in light of the policy goals.

The gap between policies, procedures and sanctions

Susana_S: How many complaints do they need? How many women need to be raped? What does it take in order for them [the gender program] to act?

The IPN is the best-case scenario to study the development of gender equity policies and its implementation because it has established policies and initiatives to promote gender equity. However, the gap between policies, procedures and sanctions is an issue that deserves particular attention. Though policies press for a supportive environment for women and men, it is also clear that without effective sanctions, the pace of change can be slow (Shackleton, Riordan & Simonis, 2006).

From this study, it seems that gender policies are mainly symbolic as evidenced by the complaint procedures being ineffectual, leaving women's voices weakened and silenced (Eyre, 2000). Sometimes, these voices are weakened by the same policies and other times, by those who hold the power in the Centre. Teresa complained to two administrators of the Centre. Despite the psychological aggression towards her, one administrator suggested that her protests were not important while the other commented that as a woman working in a male dominated field, she should "get used to it".

It seems that although global discourses on gender have recognized and provided a channel for dealing with gender and psychological violence as a form of discrimination, official sanctions avenues are not available for female students. That is, gender equity policies frame violence as problematic in the academic field, but despite this recognition, no further measure is taken. Within IPN, particularly serious offences of gender violence against female students are normalized and female (and male) students are called upon to

accept such acts as normal while obscuring the complaints of the women. Their complaints do not find proper procedures because of loop holes in policy; thus, the policies do not stand up to perpetrators. The fact that secretaries lose or bury well-founded complaints demonstrates that the policies were not designed according to local cultural dynamics.

Smith (1997) maintains that juridical discourses are used to support the perpetrators so that lack of evidence and due process are frequently given as reasons to destabilise women's rights. According to participants, the main perpetrator (the *professor*) carried out acts of misconduct over a long period of time without sanctions due to the lack of evidence and witnesses that the policies require. Hence, it seems that the equity policies are symbolic and intended to be so, because no investigation, sanction or psychological support is offered to enforce the intentions of the policy. One of the problems seems to be the deficit and sexist thinking that inhibit the intentions of the policy. The way in which complaints are addressed reinforce sexism when the women realize that the policy is merely a piece of paper to meet the external optics of gender equity.

Elitism in graduate education

The findings of this study revealed that behind the very simple idea of an open access system of graduate education, a complex institutional hierarchy is hidden and there exist not so hidden disparities with regard to class, sexual orientation and gender continue. Mainly, professors and administrators were proud of the open system irrespective of class differentials and the access by women. However, these same professors took little or no initiative to support female students gaining entrance to the institution.

Despite the fact that the IPN promotes diversity and open access, the practice of actually diversifying the CT is immensely challenging. Only one male student (Jorge) described his background in working-class terms. The rest of the students identified

themselves as belonging mainly to the middle/upper-classes, thus, presenting a clear lack of students coming from the working-class. In addition, the few women enrolled at the Centre of Technology are an exceptional case because they have been accepted in a leading university, they are members of an elite class with highly competitive students, and they enjoy the support of their families.

In this study I focused on “the success stories” of applicants to university, who perhaps, considering the number of students with access to graduate education in Mexico, constitute even more of a success story. The characteristic that these women share, besides strong will to succeed, is support from their families. Considering their economic backgrounds, the experiences of this group of students are not well represented by international agencies who, for good reasons, focus on poor, rural or marginally urban women. Nevertheless, at one of the more progressive and elite polytechnic institutions, gender discrimination in subtle and very overt forms continues to be a significant problem.

Personal attributes

Having earned a BA and a Master degree, the female students as a group did not differ from male students completing a masters or a doctorate in the sciences. These women were accepted to the graduate program of the CT and seemed to be succeeding in their academic goals. Up until the time of the interview, these women demonstrated their skills in science with a strong will to succeed and go through the IPN program. The few women who are accepted into the program are highly qualified.

Although their strategies to succeed may be considered signs of subjugation, Spivak (1988) suggests that what might seem to be a sign of women’s oppression and disempowerment could actually be a sign of clandestine agency and resistance. My findings suggest that participants considered academic success and family material and emotional

support as a motivating force to overcome the impact of gender struggles, which is why they endeavoured to succeed. Upon dealing with gender issues and complaining without a formal response, these students have chosen to avoid the individuals involved by hiding in their offices, evading being seen, keeping a male classmate nearby to ensure safety and mobility, or educating other female students of the potential risks of working with some male professors.

Teresa_S: [After the professor talked about her bra] I cried because I was really angry at myself. I thought that if I said something, he would get mad at me and people would believe in what he said. He was capable to kick me out of the program and all my dreams about school and making my parents happy would fall apart. After the incident, I tried my best to do anything he asked for the day he wanted it.

Susana_S: As I left to take care of my daughter he [the professor] got pissed off, and then he asked me to deny my own daughter!

As in Beoku-Betts' (2006) study, I also found that professors showed doubts about women's abilities to be able to do academic work. As these accounts attest, female students were subject to sexual innuendo and reproach based on their gender. Male professors often failed to recognize their students as anything other than sexual objects or inadequate students. Female students' professors could not recognize their work, perhaps because it was coming from women. Still, these women worked harder in order to meet and surpass the general regulations.

Additionally, two different problems seem to come from the policy and the gender office per se. On the one hand, the policy requires a witness as part of the procedure, which is problematic when considering the intimate and often hidden nature of gender offences. On the other hand, according to my participants, the office did not follow up on any of the complaints (by Susana, Teresa and Alicia), which is a problem because gender policies

grant at least some form of investigation. Without any follow up female complaints remained silent or irrelevant and students were left with no recourse to seek out justice for alleged offences committed against them.

Although neither the gender program nor the administrators can officially act against perpetrators because of the impossible requirements of the adjudicating procedure, rumours have played a dominant role in minimizing the offensive activity of the professor within the centre. Rumours are pieces of information whose source is unknown, hard to prove and easy to spread. Several of my participants talked about their own experiences but they were more eager to tell about other people's experiences. These rumours appeared to work as regulators on the main perpetrator and the effects have been highly noticed. After the spreading of shocking incidents without formal evidence, professors Alejandro and Janette and administrators Jose and Victor have been forced to pay closer attention to the abusing *professor's* students and place constraints on that *professor's* supervising role.

Findings from this study illustrate how participants learned to see gender issues as barriers to academic achievement, but their strong determination to complete the program combined with their families' support encouraged them to overcome the situation. While it is true that the issues facing these participants cannot, and should not be generalized to the rest of the population, it is also true that the issues that these successful women identified as barriers can be considered equally or more problematic for other less determined or less supported women in male-dominated graduate education, who left or who decided not to participate. While it is true that the CT in particular and IPN have more progressive gender equity policy in place than many other Mexican institutions of higher education, the policy is yet to impact on the lives of those women who have faced serious cases of gender discrimination in the institute and on the perpetrators.

Recommendations

Drawing on the findings from this study, I offer a number of recommendations for the CT and the whole of IPN to improve an equitable environment. These suggestions are offered to the IPN, the gender program, and the members of the CT.

IPN.

The institution needs to provide young women and men entering the institute with a safe environment for their academic development. Relevant policies are already in place in the IPN, but those policies need to be further developed and better implemented for the sake of the members of the CT. For that reason, the institutions must have clear and reasonable procedures to guarantee the investigation of every case received by phone, email, or in person for appropriate and fair handling of possible victims. These procedures have to be clarified and explained to the accusers as well so that they know how the adjudicating process works and how long it takes. To reinforce the policies, these cases should also be monitored and evaluated qualitatively and quantitatively so that more information is available.

Additionally, it is necessary that the IPN explicate the role of the supervisors to minimise and eventually remove problems of abusive power over students. Although the situation of extreme control over students could have been a case in isolation, the fact that other faculty or administration did not take action is highly problematic. It is reasonable that supervisors have influence over students, but professors need to establish ethical orientations with their student that take into account relations of power in terms of both, the supervisory and gender roles.

Finally, while the interest of the IPN in gender equity is clear, the IPN has to expand its understanding of gender issues within the cultural context of the wider academic and

general society and listen to its own members. One of the initiatives carried out in the CT opened the opportunity for learning about the local gender issues and two main suggestions came directly from the members. The first suggestion was to establish a group of volunteers (professors and/or students) to enrol more female students in the CT; this group would promote the CT through workshops, talks, and fairs directed specifically to women. The other suggestion was to promote regulations for female students (and perhaps male students) to enable them complete their academic goals after having a baby. In other words, CT needs to provide for parental leave for graduate students so that they are not academically penalized for starting families. Participants described that scholarships and completion time all need to be part of the leave process.

Gender Program.

The gender program needs to pay particular attention to the students of the IPN, but more importantly, to each of the complaints that the office receives. My participants described how forwarding complaints was ineffectual because their complaints did not receive any follow up. This is something that clearly needs to change.

The study participants articulated their concern with the lack of participation of the gender program in terms of representation and action. Although participants noticed signs of the existence of the gender program (workshops, posters), a clear lack of presence was evident in local initiatives that support gender and individual complaints. The gender program has to be recognized as one that addresses massive and local initiatives, the large population, and individuals as well.

Although it is clear that the gender program needs to address harassment and sexual discrimination, it is also important that it pays attention to the local needs of the members of the IPN. Both types of initiatives are desirable as well as large initiatives to reach a broad

population and local initiatives to address the needs of particular populations. In addition, the collection and reporting of statistics need to be complemented by qualitative studies.

Also, it is recommended that the gender office promotes workshops and other forms of education directed towards changing specifically the masculinist culture in the IPN. The masculinist culture impedes the implementation of the gender policy; thus, it impedes the fair academic environment for all the members of the IPN.

Finally, after receiving allegations of harassment, the gender program should redirect possible victims to a psychological centre. Victims may need support and orientation to find ways to succeed in their academic and personal goals. The establishment of a psychological centre can assist members of the IPN to overcome and solve problems on the part of perpetrators, perpetrators, and victims.

Members of the CT

The issue of gender equity in the CT requires a commitment from all its members, that is, they need to reconsider their understanding and approach to gender equity. First, having “open doors” does not automatically support access by minority groups. Some strategies like promotion or direct invitation may be needed. As well, once female students are admitted professors must take concerted efforts to support rather than hinder their academic progress at the institute.

Also, there is need for workshops to educate all actors on gender discrimination and protocols for reporting in which participants learn that accusing is not an easy act and that their reaction can impact people in different ways. By this, I do not mean that members need to become gender specialists, but they should know at the very least where to direct students and how to support their complaints to ensure a fair and safe environment for all students working at the institute.

Finally, the head administrators might hold a meeting with students at least once a year to learn about his/her progress and (possible) barriers. In this way, the head administrator opens a dialogue to name problems, concerns, or barriers to the students' academic achievement and students have the possibility/opportunity of approaching an authority in the CT. Greater communication between faculty and students has the potential to lessen the rigid hierarchal structure that exists at the CT while opening opportunities for new dialogue and understanding among all.

Further research

In some sense, this study provides a glimpse of the complex ways in which gender is conceived and gender equity is constrained by the institutional dynamics and patriarchal-informed mentalities of many of the CT actors. A comparative ethnography would be necessary to really get at how gender is constructed and performed in Mexican higher education in relation to other countries, where much of the academic literature is produced. Longitudinal research on women as they progress across their schooling and career pathways would also be very useful to the project of understanding the evolving challenges of gender equity in SE disciplines.

Additionally, in this study, I only had the chance to study successful female students from middle and upper class backgrounds. Further research might also be useful to interview dropouts from the program who did not find the means of support to continue their education at CT. Further, given that some professors seemed to wield much power over both male and female students, it would be interesting to study in more depth how male students experience the professor/supervisor-student relationship.

I also believe that my study could have been enriched if I had interviewed the personnel in the Gender Office. By interviewing a few people I was able to focus more on

obtaining in-depth information from those participants. However, I believe that the personnel may have shed more light on policies and procedures relating to gender equity. Perhaps by learning about their own understanding of gender equity, may have learned more about the limitations for advancing gender equity in substantive and sustainable ways in a place such as the CT. Hence, further research should focus on people working in the Gender Office who are responsible for responding to students concerns and complaints.

Conclusion

In this study, I aimed to examine the effect of gender equity policies in a graduate program in a leading Science and Engineering institution in Mexico. In doing so, I uncovered some of the problems, silences, achievements and contradictions that have emerged at the CT. At the time of my interviews and field data collection, gender policies had been in place for three years and change had been achieved along certain registers, but much work remains to be done.

By using a postcolonial feminist theoretical approach, I established a frame through which to analyze the effect of external gender policies on gender equity relations at the CT. A gender-equity friendly policy is a necessary, if insufficient, step toward greater gender equity in higher education. While there have been some undeniable gains in the IPN, particularly in relation to the implementation of large initiatives, gender discrimination continues to be a subtle and overt part of daily life in this graduate program. Those who hold and abuse formal power and prestige in the university continue to be officially protected, while victims of gender injustice struggle to have their voices heard, and, sometimes, suffer fear and face reprisals. Ultimately, participants in this study ended up in a contradictory situation of either reinforcing the elitist masculinist culture of the IPN or resisting the status quo without change. Male power remains dominant and at times

unrelenting at the CT despite the interventions of external gender equity policies and programs.

Results from this study indicate that female graduate students in the CT share many experiences with their ‘developed country’ counterparts. Still, the way that gender is performed and challenged is contingent on the social and cultural context of this local environment. Unlike the mechanisms of adjudication available to female students in Western nations, female students often had to rely on their own networks of support or inner resources to resist acts of sexual discrimination and violence at the hands of their male professors in the CT. Female students in this study found ways (i.e., spread of rumours) to voice their concerns and to warn other students of potential risks. Their strategies of clandestine action helped them to stay in the program and to achieve their academic goals.

Where gender policies are imported from external sources, they need to be attuned to local conditions. These policies have put gender equity within a Mexican context on the “radar,” but without workable procedures or sanctions and without gender education of powerful players in the university, these policies remain ineffectual. Gender policies work in a complex way, since they present both material and symbolic characteristics (Rizvi & Lingard, 2010). The implementation of initiatives suggests the need for funding, education and a strong commitment, which are characteristics of material policies. On the contrary, the lack of clear protocols and sanctions suggest that such policies remain effectively symbolic.

Finally, as this study indicates, it is important to challenge the dominant culture of the CT and establish the means for actively intervening all forms of gender discrimination through proactive local interventions, education of faculty and students, workshops, and the

political will of the administrators. If these changes take time, they are worth it. At this point, gender equity policies seem to be more symbolic than material at the CT leaving many female students without recourse and right to an education in a safe and supportive learning environment.

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APPENDIX A

VIOLENCE-RULER

It does not matter where you identify yourself, violence is not normal, stop it get information

Call life without violence line: 01 800 911 25

Be careful! Violence will increase	__1 Painful Jokes __2 Blackmailing __3 Lie/cheat __4 Ignore/ silent treatment __5 Jealousy __6 Blame __7 Disqualify __8 Mock/Offend __9 Intimidate/threat __10 Control/prohibit (friends, family members, money, places, __11 Clothes, looks, activities, mails, cell phones, etc.)
Wake up! Don't permit your own destruction.	__12. Destroy personal papers __13. Touch __14. Aggressive petting __15. Hit "playing" __16. Pinching/scratching __17. Pushing/Pulling
You need professional help!	__18. Slapping __19. Kicking __20. Locking/isolating __21. __22. Threatening with objects or weapons __23. Death threats __24. Forcing a sexual relationship __25. __26. Sexual abuse __27. __28. Rape __29. Mutilation
__30. Kill	
www.genero.ipn.mx	www.inmujeres.gob.mx

APPENDIX B

Violentómetro

Programa institucional de gestión con perspectiva de Género del IPN

No importa en qué nivel te identifiques,

La violencia no es normal, deténla ¡infórmate!

Línea vida sin violencia: 01 800 911 25

<p>¡Ten cuidado! La violencia aumentará</p>	<p>__0 Bromas hirientes __1 Chantajear __2 Mentir/engañar __3 Ignorar/ ley del hielo __4 Celar __5 Culpabilizar __6 Descalificar __7 Ridiculizar/ofender __8 Humillar en público __9 Intimidar/ amenazar __10 Controlar/prohibir (amistades, familiares, dinero, lugares, vestimenta, apariencia, actividades, mails, celular, etc.). __11</p>
<p>¡Reacciona! No te dejes destruir</p>	<p>__12 Destruir artículos personales __13 Manosear __14 Caricias agresivas __15 Golpear “jugando” __16 Pellizcar/arañar __17 Empujar/jalonear __18 Cachetear __19 Patear __20 Encerrar/aislar __21</p>
<p>¡Necesitas ayuda profesional!</p>	<p>__22 Encerrar/aislar __23 Amenazar de __24 Muerte __25 Forzar a una __26 relación sexual __27 Abuso sexual __28 Violar __29 Mutilar</p>
<p>__30 Asesinar</p>	
<p>www.genero.ipn.mx www.inmujeres.gob.mx</p>	

APPENDIX C: LETTER OF INFORMATION

Introduction

My name is Elida Sanchez Cruz and I am a PhD candidate at the Faculty of Education at The University of Western Ontario. I am currently conducting research into the experiences of women in male dominated programs and would like to invite you to participate in this study.

Purpose of the study

Given Mexico's gender equality policies in Education, the aim of this study is to illuminate what gender equity looks like on the ground in a male-dominated program.

If you agree to participate in this study you will be asked to take part in an interview that will take approximately 90 minutes. This interview will take place at a time and location that is most convenient for you. Interviews will be audio-recorded and I may take notes during the interview. You will be given a paper copy of the transcripts of your interview and you will be able to make changes as you wish.

Confidentiality

The information collected will be used for research purposes only, and neither your name nor information which could identify you or the university will be used in any publication or presentation of the study results. All information collected for the study will be kept confidential. Transcripts of the interviews will be kept secure in a locked cabinet. Your name and the name of the institution will be replaced by a pseudonym in all of the data.

Risks & Benefits

There are no anticipated risks in participating in this study. However, if you decide to participate, the potential benefits of this study include the opportunity to be involved in a research project that may be influential for your program or other institutions. Additionally, this research will give you the opportunity to express your opinion and concerns about the experiences of women.

Voluntary Participation

Participation in this study is voluntary. You may refuse to participate, refuse to answer any questions or withdraw from the study at any time with no effect on your academic or employment status.

Questions

If you have any questions about the conduct of this study or your rights as a research participant you may contact the Manager, Office of Research Ethics, The University of Western Ontario at xxx-xxx-xxxx or xxxx@xxx.xxx. If you have any questions about this study, please contact Elida Sanchez Cruz, at: xxxx@xxxx.com or my supervisor, Dr. Paul Tarc, at xxx-xxx-xxxx or xxxx@xxx.xx.

This letter is yours to keep for future reference.

Thank you,

Elida Sanchez Cruz

APPENDIX D: CONSENT FORM

**Mexican Women in Science and Engineering: The Impact of
Gender Equity Policies in Higher Education**

Elida Sanchez Cruz, PhD Candidate

CONSENT FORM

I have read the Letter of Information, have had the nature of the study explained to me and I agree to participate. All questions have been answered to my satisfaction.

Name (please print): _____

Signature: _____

Date: _____

Name of person obtaining informed consent: _____

Signature: _____

Date: _____

APPENDIX E: LETTER OF INVITATION FOR STUDENTS

Mexican Women in Science and Engineering: The Impact of Gender Equity Policies in Higher Education

Dear graduate student:

You are being invited to participate in a Research Project that, given the gender policy environment in your institution, explores the experiences of women in male dominated programs in a gender policy environment. As a student at a Mexican university, you have important insights to offer about these experiences. If you agree to participate in this study, you will be asked to participate in an interview that may take up to 90 minutes or it could also be divided into three sessions depending on your preference. The interview will take place at a time and location that is most convenient for you.

The interview(s) is completely confidential and voluntary.

The research project is being conducted by Elida Sanchez Cruz (University of Western Ontario). If you have questions about the study or would like to volunteer to participate, please contact me at XXXX@XXX.COM.

Sincerely,

Elida Sanchez Cruz

**APPENDIX F: LETTER OF INVITATION FOR ADMINISTRATORS AND
PROFESSORS**

**Mexican Women in Science and Engineering: The Impact of Gender Equity Policies
in Higher Education**

Dear administrator/professor:

You are being invited to participate in a Research Project that explores the experiences of women in male dominated programs in a gender policy environment. As an administrator or professor at a Mexican university, you have important insights to offer about these experiences. If you agree to participate in this study, you will be asked to participate in an interview that may take up to 90 minutes or it could also be divided into three sessions depending on your preference. The interview will take place at a time and location that is most convenient for you.

The interview(s) is completely confidential and voluntary.

The research project is being conducted by Elida Sanchez Cruz (University of Western Ontario). If you have questions about the interview or would like to volunteer to participate, please contact me at XXXX@XXXX.COM.

Sincerely,

Elida Sanchez Cruz

APPENDIX G: INTERVIEW PROTOCOL

Students

- Can you tell me a little bit about yourself?
 - ✓ Ex. Where do you come from? Where is your extended family? What do your parents do for a living? Have you ever been to a private school? Why and when did you decide to pursue Science and Engineering? Why did you decide to pursue graduate education?
- What enablers do you face here in the program?
- Do you feel comfortable at school?
- What constraints do you face in the program?
 - ✓ Is there any program or service to support you with these constraints?
- How does the graduate climate (classroom, lab, school) impact your learning development?
- What are your science experiences (access, achievement, and attitudes) in the graduate program?
- Why do you think there are so few women in the program?
- What kind of support do you find in terms of attitudes from professors and classmates?
- Do you think that your gender is relevant for your studies? How?
- In your opinion, do you think the *administrators* could contribute or make a difference in the challenges that you face as a student? If so, how?
- In your opinion, do you think the *professors* could contribute or make a difference in the challenges that you face as a student? If so, how?
- Do you enjoy your studies as much as you thought you would before coming here? Why?
- Do you think you are treated different because of your sex? Why?
- Do you think you can face discrimination in your program because you are a woman? Why?
- Have you ever been treated different because you are a woman? Would you mind telling me about it?
 - ✓ Did you ever complain about it? What sort of procedures did you follow? What responses did you get?
- Have you ever heard of any programs that promote gender equity?
 - ✓ Have you ever assisted to one of those programs? How did you find it?
- How do your studies fit into other aspects of your life?
- What responsibilities they have outside of school in the domestic or employment domain?
- What support would you need to have in order to be able to enjoy your studies?
- How do you see your future as a professional?
- Anything else that you would like to add that I haven't asked?

Interview for Administrators

1. What is gender equity in this program?
2. What do you understand as gender equity as an administrator?
3. Has there been any strategy implemented to support/encourage gender equity?
4. If so, can you tell me about them?
5. Are these strategies attended?
6. Do you think that there is gender equity in the program?
7. In what sense?
8. Is there any special funding available to promote gender equity?
9. Is there any procedure to prevent violence and sexual harassment in the institute?
10. Has the administration ever implemented a program to increase parity of female students and educational administrators in the institute?
11. If so, how did it work?
12. Do you think that gender is relevant for the students in the institute?
13. What do you consider to be the most significant challenges/issues for female students?
14. What would be the steps to follow a situation where there is discrimination against one student based on their gender?
15. Has there been any problem among female students that has been reported?
16. If so, can you tell me about it?
17. Are there any initiatives aimed at achieving greater gender equity among professors and students and among students themselves?
18. Could you explain how you understand gender equity?

Interview for professors

1. Have you ever been trained on gender equity?
2. If so, can you tell me about the training session?
 - ✓ Ex. When did it happen? How often are these sessions available?
3. What do you understand by gender equity?
4. How do you facilitate the inclusion and fair treatment of female and male students?
5. Do you promote gender equity in your classroom?
6. How do you promote gender equity in your supervising sessions?
7. Have you ever been involved in a gender equity situation?
8. If so, what steps were taken?
9. How do you facilitate the participation/achievement/learning of female students?
10. How do you promote equitable treatment in your teaching?

VITA

Name	Elida Sanchez Cruz
Post-secondary Education and Degrees.	Universidad Veracruzana Xalapa, Veracruz, Mexico 1993-1998 B.A. Queen's University at Kingston, Ontario, Canada. 2002-2004 M. Ed. Western University. London, Ontario, Canada 2007- 2012 PhD
Honours and Awards	Western Graduate Research Scholarship, University of Western Ontario: 2007- 2011.
Related Work Experience	Research Assistant Western University Teaching Assistant/Research Assistant Queen's University
Publications	