Connection, Technology, Positionality: An Inside Look at Women Faculty's Positionality toward "Connection" and "Technology"

Wei Zhai
Utah State University

Follow this and additional works at: https://digitalcommons.usu.edu/etd
Part of the Instructional Media Design Commons

Recommended Citation
Zhai, Wei, "Connection, Technology, Positionality: An Inside Look at Women Faculty's Positionality toward "Connection" and "Technology"" (2010). All Graduate Theses and Dissertations. 567.
https://digitalcommons.usu.edu/etd/567
CONNECTION, TECHNOLOGY, POSITIONALITY: AN INSIDE LOOK
AT WOMEN FACULTY’S POSITIONALITY TOWARD
“CONNECTION” AND “TECHNOLOGY”

by

Wei Zhai

A dissertation submitted in partial fulfillment of the requirement for the degree

of

DOCTOR OF PHILOSOPHY

in

Instructional Technology and Learning Sciences

Approved:

______________________
Dr. J. Nicholls Eastmond
Committee Co-chair

______________________
Dr. Martha Whitaker
Committee Member

______________________
Dr. Ronda Callister
Committee Co-chair

______________________
Dr. Katy Campbell
Committee Member

______________________
Dr. Byron R. Burnham
Committee Member

______________________
Dr. Doug Holton
Committee Member

______________________
Dr. Byron R. Burnham
Dean of Graduate Studies

UTAH STATE UNIVERSITY
Logan, Utah

2010
ABSTRACT

Connection, Technology, Positionality: An Inside Look at Women Faculty’s Positionality

Toward “Connection” and “Technology”

by

Wei Zhai, Doctor of Philosophy

Utah State University, 2010

Major Professors: Dr. J. Nicholls Eastmond and Dr. Ronda Callister
Department: Instructional Technology and Learning Sciences

Women faculty members have been reported rating their level of knowledge and experience in using technologies lower than male faculty members. A closer examination revealed that women faculty members were likely to use technologies that fit into their pedagogy, met students’ learning styles and needs, and facilitated their interactions with colleagues and students. So women faculty’s choices of particular technologies can be assumed to reflect their particular instructional beliefs and perspectives, represented as a connected approach to learning and teaching. Gender alone is inadequate to explain women faculty’s use of technology.

The purpose of this study was to explore women faculty’s understanding of teacher-student, student-student, and student learning-life connections and how technology affects these connections. A theoretical framework called positionality is used, which approaches women not solely from their biological or psychological attributes but also from the contexts in which they are situated. The results of the study suggested that women faculty members exhibited a positional understanding of the teacher-student,
student-student, and student learning-life connections. A positional consciousness was reflected in their use of strategies to promote these connections. Technology played a positional role in women faculty’s effort to create connections.

Women faculty’s views and practices of “connection” and “technology” are better understood by the contexts in which they are situated rather than by their gender. Women faculty often assume multiple identities expressed from different positions within different contexts, which is reflected by the variations in their relationships with students, their different perceptions of their student relationship with each other, their different ways of promoting connections, and their different views and use of technology. Limitations of the current study, recommendations for future research, and practical implications are discussed.

(201 Pages)
ACKNOWLEDGMENTS

I might have abandoned this work in its early days as a maze that I could never have navigated without the support of a whole network of my committee members, fellow students in the department, friends, and families.

I express my deepest gratitude to my committee chairs and committee members. I’d like to single out for their extraordinary support: Professor Nick Eastmond for initially connecting me with the ADVANCE program that took a marvelous turn in my life, for his steady guidance and support for my growth, and for his cheerful whistling that reminds everyone that “a new day has come”; Professor Ronda Callister for her spiritual nurturance, whose scholarship, dedicated work ethics, and thoughtfulness, patience and generosity with her students I have found so inspiring; Professor Byron Burnham for his consistent understanding and encouragement to keep me hanging on there; Professor Martha Whitaker for patiently helping me find my way among the mountains of feminist readings during my initial contact with feminism, and for walking me through the unpredictable research process step by step; Professor Katy Campbell, for her extreme kindness to agree to supervise a “stranger” initially, for her persevering confidence in me as a capable researcher, for pushing me to stay with my passion, and for stimulating my professional development; Professor Doug Holton, for his encouraging feedback on my work. I couldn’t be luckier for having such a committee whose collective wisdom has expanded my intellectual horizon.

My special thanks go to Max Cropper, who shares an office with me, for his generous assistance with my research work, for informing me of current instructional design theories and practices, and for sharing with me his views on the evolution of IT
field even when he has started yawning. I thank Melanie Bodily, our secretary, for her sweet smiles and hugs. I thank my fellow Ph.D students in the department who have shared my laughter and tears. I want to thank my roommate, Fangjuan Hou, for being a source of strength and motivation.

I owe a debt of gratitude to the women faculty members who participated in my study as well as those who indicated their interests in participating in my study but couldn’t due to particular reasons. I’m deeply impressed with their patience with my uncommonly long interviews and follow-up questions, their forthrightness in sharing with me their stories and experiences, and their genuine intent to support a Ph.D student to fulfill her dream. I am grateful for the instructional designers who initially warmly provided me with a list of women faculty members for contact.

Finally, I owe an impossible debt to my father for more than a quarter of a century’s peaceful life; and to my mother for stretching my endurance for challenge and instilling in me the ambition to succeed.

Wei Zhai
CONTENTS

Page

ABSTRACT ........................................................................................................ iii

ACKNOWLEDGMENTS .............................................................. v

LIST OF TABLES ..................................................................... x

LIST OF FIGURES ................................................................. xi

DEFINITIONS ........................................................................ xii

CHAPTER

I  INTRODUCTION ......................................................................................... 1

II  REVIEW OF LITERATURE .............................................................. 6

Locating the Studies .................................................................................. 7
Overview of Higher Education Faculty Usage and
Perception of Technology ........................................................................ 9

Faculty Use of Technology .................................................................... 9
Faculty Perception of Technology ......................................................... 10

Connected Learning and Teaching ...................................................... 15

Connected Learning ............................................................................ 16
Connected Teaching ............................................................................. 20

Connection and Instructional Technology ....................................... 24
Summary ................................................................................................. 27

III  RESEARCH METHODOLOGY ......................................................... 31

Research Design – Case Study ............................................................ 31
Theoretical Perspective – Positionality ................................................. 33
Bracketing Interview ........................................................................... 47
Pilot Interviews ..................................................................................... 47
Initiate the Research ............................................................................. 49

Recruitment ............................................................................................ 49
Participants Background ...................................................................... 50
Data Collection ............................................................................................................. 53
  Interviews .................................................................................................................. 53
  Classroom Observations .......................................................................................... 55
  Artifacts ..................................................................................................................... 56
  Instant reflection notes .............................................................................................. 57
Data Analysis ................................................................................................................ 57
Verification ..................................................................................................................... 59
Potential ......................................................................................................................... 60
Ethical Challenges ........................................................................................................ 60

IV FINDINGS .................................................................................................................. 63

Women Faculty Overall Use of Technology ................................................................. 64
Teacher – Student Connection ..................................................................................... 74
  Women Faculty’s Understanding of Teacher-Student Connection ................. 74
  Technology May Facilitate Teacher-Student Connection ............................ 87
  Technology May Interfere with Teacher-Student Connection ................ 92
Student-Student Connection ....................................................................................... 99
  Women Faculty’s Understanding of Student-Student Connection ............ 99
  Technology May Facilitate Student-Student Connection ......................... 105
  Technology May Interfere with Student-Student Connection ................ 108
Student Life-Learning Connection ............................................................................. 111
  Women Faculty’s Understanding of Student Life-Learning Connection .... 111
  Women Faculty’s Strategies to Promote Student Life-Learning Connection ....... 114
  Technology May Facilitates Student Life-Learning Connection ............ 119
  Technology May Interfere with Student Life-Learning Connection ......... 122

V CONCLUSION ............................................................................................................. 127

Positional Understanding of Teacher-Student Connection .................................... 128
Positional Understanding of Student-Student Connection ..................................... 133
Positional Understanding of Student Life-Learning Connection .......................... 134
Positional Use of Connecting Strategies ................................................................ 136
Positional View of Technology ................................................................................. 139
Positional Role of Technology in Connection ......................................................... 142
Concluding Remark ................................................................................................. 144
Future Research and Practical Implications ............................................................ 148
REFERENCES ......................................................................................................................... 153

APPENDICES .......................................................................................................................... 166

Appendix A: IRB Form ........................................................................................................... 167
Appendix B: Bracketing Interview ..................................................................................... 169
Appendix C: Interview Protocol ......................................................................................... 180
Appendix D: Glossary of Technological Terms ............................................................... 183

VITA ........................................................................................................................................ 187
## LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Women Faculty Participation by Work and Discipline</td>
<td>50</td>
</tr>
<tr>
<td>2. Women Faculty’s Strategies to Promote Connections</td>
<td>64</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Abrasive tech services</td>
</tr>
<tr>
<td>2</td>
<td>Is it hard to imagine</td>
</tr>
<tr>
<td>3</td>
<td>Students buttering up professors</td>
</tr>
<tr>
<td>4</td>
<td>Generation gap</td>
</tr>
</tbody>
</table>
DEFINITIONS

Affordance – Benefits offered by technologies to facilitate teaching and learning.

Connection – The relationship between the teacher and the students, among the students, between students’ life experience and the subject knowledge through supporting students’ multiple perspectives, encouraging students to draw on their life experience for their learning and applying their acquired knowledge into their real life world (Flannery, 2000).

Instructional Technology – Not only hardware and software, but also learning and teaching theories and the systematic process of designing, developing and utilizing resources for teaching and learning (Seels & Richey, 1994).

Positionality – A theoretical perspective that locates people and events in relation to other people and other events within constantly shifting contexts (Alcoff, 1988). Positionality forms the base of my theoretical framework, which is detailed below.

Technology – “The application of scientific and other knowledge to practical tasks by ordered systems that involve people and organizations, living things and machines” (Pacey, 1983, p.6).
CHAPTER I
INTRODUCTION

Technology has become a major theme in the lives of educators. Within the academic domain, technology has transformed American higher education with its potential as one of the influential pedagogical tools (Mitra, Lenzmeier, Steffensmeier, Avon, Qu, & Hazen, 2000). It has the great potential of enriching classrooms with color imagery, full-motion video and stereo sound (Hofstetter, 1993, as cited in Spotts & Bowman, 1993). It brings a global audience into a virtual classroom and provides them with easy access to course materials, lectures, assignments and exams (Grasha & Yangarber-Hicks, 2000). It also enables faculty members to update and revise lecture materials easily to better meet students’ need (Armstrong, 1996). With the availability of technology, faculty members benefit from the instant connection with information resources for teaching and research, as well as increased student-teacher interactions.

Despite the increased accessibility and affordances of technology (Breighaupt, 1997), faculty members have not yet taken full advantage of it (Rice & Miller, 2001; Spotts & Bowman, 1993; Straus, 2005; Strudler, McKenney, & Jones, 1995). In particular, women faculty members have often embraced technology with caution. Women in general were often reported as having lower interest and efficacy in, negative attitude toward, and higher anxiety about the use of computer or computer-related technologies than male faculty (Brosnan, 1998; Shashanni, 1997). Spotts, Bowman, and Mertz (1997) showed that female faculty tended to rate their level of knowledge and experience in using technologies lower than did male faculty. However, the story does not end here. A closer examination revealed little significant gender difference in the
overall use of web based resources, email, word processing, computer spreadsheet, and presentation software (Campbell & Varnhagen, 2002; Ogan & Chung, 2003; Spotts et al., 1997). It was indicated that women faculty tended to use technologies that fit into their curriculums, met students’ learning styles and needs, and facilitated their interactions with colleagues and students (Campbell & Varnhagen, 2002; Peluchette & Rust, 2005).

So, women have shown lower interest and higher anxiety about some, but not all, computer or computer-related technologies. Research suggested that women’s choice of particular technologies reflect their particular instructional beliefs and perspectives, represented as a connected approach to learning and teaching (Flannery, 2000; Lacey, Saleh, & Gorman, 1998; Robin & Harris, 1998).

To date, scant research has made it a central focus to explore women faculty’s experiences of using technology for teaching. Most studies have adopted survey methodology and presented an overall picture of gender difference in faculty attitude toward and use of technology. But little progress has been made toward an in-depth analysis of what lies beneath the current technology usage pattern that women faculty exhibit. Stake (1995) suggested looking at “a wide sweep of contexts: temporal and spatial, historical, political, economic, cultural, social, and personal” (p. 43) in order to “sophisticate the beholding” (p. 43) of the phenomenon. Gender, if considered alone, “tends to obscure process issues” because “gender is but one piece of the human-computer interaction puzzle” (Kay, 1992, p.166).

Women as a category can be represented by a constellation of aspects including their biology and their constantly shifting positions within the constantly changing historical, social, cultural, political and personal contexts. Gender is only one aspect of
this constellation and should not be rendered as solely authoritative for interpreting women faculty members’ instructional perspectives and their views and use of technology. The theoretical framework called positionality proves more compelling for explaining this issue, a way to learn about women not solely from their biological or psychological attributes but also from the context in which they are situated (Alcoff, 1988).

Many recent studies examined the connecting effect of technologies on learning from the students’ perspective by sampling their perceptions on this issue through surveys and interviews. Because the literature on technology use in the higher education classroom has noted particular differences in the way that male and female faculty use technology in their teaching, and because more recent studies suggest that women use technology selectively in ways that may reflect their tendency to have a commitment to connections within the educational context (Campbell & Varnhagen, 2002; Peluchette & Rust, 2005), it is also important to hear women faculty’s voices regarding their perceptions of the connecting capacity of technologies.

The notion of connection in recent studies often conveys the meaning of relating to people. “Connection” can be extended by including the interaction between subject knowledge and life experience by encouraging students to draw on their life experience for their learning and apply their acquired knowledge into their real life world (Flannery, 2000). Furthermore, I believe that “connection” embraces a range of relationships at different levels from establishing and maintaining friendly relationships with people to a more profound level of understanding other people’s experiences (Martin, 1992; Noddings, 1984). The latter level of connection takes more than just being nice to each
other. It also entails keeping our minds open and empathic in order to enter other people’s world to experience what they experience, which may lead to further interaction and collaboration to achieve a meaningful cause. The connection between learning and life also occurs at different levels, ranging from acknowledging students’ personal experiences as a valid source of knowledge to “nudge[ing]” (Turpin, 2007, p. 13) them to develop critical thinking skill that allows them to develop the capacity to be truly reflective about their life experiences and take ownership for their personal agency. These different levels of meanings of connection among people and between learning and living deserve further exploration.

My research question for this study are (1) How do women faculty members understand and create teacher-student, student-student and student life-learning connections? (2) What role does technology play in their effort to create these connections? In my study, the notion of connection will be further sophisticated in two senses: (1) by exploring in depth women faculty’s understanding of and their efforts to promote not only the connection between students and themselves and among the students but also the connection between students’ life experience and the subject knowledge; (2) by examining the concepts of “connection” within a positionality theoretical framework (Alcoff, 1988).

At last, to focus on women is not to suggest that men and women should understand “connection” and embed it in the use of technology in different or even opposite ways. I believe that men are equally capable of adopting connected approaches for teaching and that some men may show higher interest in the connected approach than some women. My inquiry on women is not to differentiate between men and women but
to respond to existing literature that suggests that researching women’s use of technology may result in the development of a nuanced insight into the idea of connection and whether or how technology facilitates the connection. Without this knowledge, we are only “the wise but blind men who tried to understand what an elephant was from touching its different parts” (Tiffin & Rajasingham, 1995, p. 20).
CHAPTER II
REVIEW OF LITERATURE

Over the past two decades, technology has found a cordial home in higher education. Great investments have been made in purchasing and installing technologies to support teaching and learning (Geoghegan, 1994). It has been expected that a seamless integration of technology into our lives will take place (Mitchell & Gunter, 2004). Despite the availability of a variety of technologies and their well-recognized benefits for instruction, women faculty members are slower adopting them than men. However, the long established belief that women in general have less experience in and higher anxiety about computer or computer-related technologies seems inadequate to explain the dilemma. Recent studies have found gender differences in faculty’s attitude toward and use of, only some but not all technologies (Campbell & Varnhagen, 2002; Ogan & Chung, 2003; Spotts et al., 1997). This finding challenges focusing on gender as the sole factor in explaining women faculty use of technology. To learn about why women faculty tend to use certain but not other technologies, a close examination of women’s ways of learning and teaching is needed.

This review of literature consists of three sections. Section one presents an overview of literature regarding higher education faculty’s current usage and perceptions of technologies. Gender difference in faculty usage of technology is highlighted. Section two explores literature about women’s ways of learning and teaching, which informs their ways of technology usage. In section three, studies showing a compatible combination of the use of technology and women’s ways of learning and teaching are examined.
Locating the Studies

For section one, no prior review of literature on gender difference in faculty use of technology was located. Articles regarded as primary sources in this review were obtained through searching the electronic databases at Utah State University, which includes Academic Search Elite, Education Full Text, Educational Resources Information Center (ERIC), Professional Development Collection, Social Science and Technology Research Database.

The following key words were used for these searches: instructional technology, educational technology, information technology, communication technology, network technology, Internet, World Wide Web, media, computer, faculty, female faculty, male faculty, higher education, gender difference, teaching, and research. The same key words were also used to do a general Internet search through the search engine Google.

For section two, two books were first identified through the reference list of one article. More books and articles were allocated through the references of these two books. For section three, an online search was conducted in the library database at Utah State University. Key words include connection, collaboration, community building, distance learning, distance education, and computer mediated education.

“Technology” and “Instructional Technology”

Pacey (1983) summed up technology as “the application of scientific and other knowledge to practical tasks by ordered systems that involve people and organizations, living things and machines” (p. 6). This literature review attempts to focus on the human aspect of the practice of technology, such as “personal values and individual experience
of technical work” (p. 5). By that, I mean female faculty’s experiences with using technology for teaching, their documented tendency to view learning and teaching as relational and connected and the values they are likely to place on personal relevance to the learning content, all of which influence the way female faculty might use technology. This literature review recognizes the inseparable nature of human beings in connection with the operation, management and maintenance of technology, in an effort to understand the practice of technology in a meaningful way (Pacey, 1983).

Instructional technology used to refer to hardware and software, tools that distribute information and perform tasks. The original concept of instructional technology evolved by encompassing learning and teaching theories and the systematic process of designing, developing and utilizing resources for the purpose of learning (Seels & Richey, 1994). Gray and Cao (2000) suggested making a distinction between using technology as medium and using technology as “an integral aspect of the curriculum” (p. 42). In the same vein, Clark (1994) distinguished between delivery technology, such as hardware and software, and instructional technology that mainly consists of instructional methods. Media/delivery technology can not increase learning alone. The systematic design of instruction, in compatible combination with media, helps turn information into knowledge.

Most studies reviewed in section one assigned the meaning of the media component/delivery technology to “instructional technology,” which not only includes the modern electronic products but also the traditional tools such as chalk, blackboard, whiteboard and overhead transparency. These technologies were mainly used for information delivery. For section two, women’s ways of learning and teaching are
reviewed, which shifts weight to the pedagogical aspect of instructional technology. Articles reviewed in section three exhibits a coherent combination of the media aspect with the pedagogical aspect of instructional technology, which indicated the potential of technology for supporting women’s preference for a connected approach to teaching.

Overview of Higher Education Faculty Usage and Perception of Technology

Faculty Use of Technology

Overall, the most frequently used technologies were email, web searching and browsing, online courses, online discussions, audio, video, film technology, word processing, computer spreadsheet and computer presentation software. Black board, white board and overhead transparencies were still in use to some extent (Ahadiat, 2003; Campbell & Varnhagen, 2002; Ogan & Chung, 2003; Spotts et al., 1997).

Male faculty displayed a higher usage of total computer application than female faculty (Rousseau & Rogers, 1998). Male faculty exhibited a higher level of knowledge and experience with multimedia, computer-assisted instruction, statistical computing software, page design program and video editing software than female faculty (Ogan & Chung, 2003; Spotts et al., 1997).

Female faculty indicated greater interest in communication technology such as email, discussion forums and electronic bulletin boards (Campbell & Varnhagen, 2002; Ogan & Chung, 2003). Campbell and Varnhagen (2002) explained that female faculty members were inclined to use technologies for the purpose of communications and interactions with students and colleagues. For instance, they liked using emails and discussion forums to enhance their interactions with students. They also benefited from
technologies’ facilitation of increased contacts with colleagues, which was seen as “an important consideration” in adopting technologies (p. 48).

Pedagogical relevance was an important factor in women’s decisions in technology infusion. Women tended to use technologies that allowed them to strengthen a relational learning environment and accommodate students learning styles and meet students’ needs (Campbell & Varnhagen, 2002; Peluchette & Rust, 2005). Women were more likely to use technologies that supplemented and expanded what was offered by the existing instructional methods, even at the cost of “overhaul”ing their courses (Campbell & Varnhagen, 2002, p. 47; Ogan & Chung, 2003).

**Faculty Perception of Technology**

**Positive view.** The most frequently cited advantage of technologies was their contribution to enhanced teaching and learning (Glasgow & Keim, 2005; Quick & Davies, 1999; Spotts & Bowman, 1993; Vodanovich & Piotrowski, 2005; Zhao, Alexander, Perreault & Waldman, 2003). For instance, web-based instruction allowed both faculty and students convenient access to information and communications with a large audience (Vodanovich & Piotrowski, 2005). Community college faculty relied on multimedia to support an interactive learning environment. In this environment, many of them tried to turn themselves from lecturers to mentors or coaches who did not simply convey information, but facilitated more learner-centered activities (Quick & Davies, 1999). Journalism and mass communication faculty believed technologies were of great value to students. They proposed faculty members keep up with the latest technological changes and teach students the latest software (Voakes, Beam, & Ogan, 2003).
Negative view. One major concern pertained to the relationship between technology and learning and teaching effectiveness (Campbell & Varnhagen, 2002; Peluchette & Rust, 2005; Seay, Rudolph, & Chamberlain, 2001; Spotts & Bowman, 1993; Spotts et al., 1997; Vodanovich & Piotrowski, 2005). Faculty members contended that technology should be used when it reinforced student interest in and learning of the course content. Of particular concern to some faculty was whether it had become “faddish” to use technology with no careful evaluations of its effectiveness (Spotts & Bowman, 1993, p. 202). Most faculty members were unwilling to adopt technology when no evident superiority over traditional method was identified. For instance, interactive television instruction failed to gain faculty’s favor because it was not perceived to cover as much materials as the traditional course setting while taking a lot more faculty preparation time (Seay et al., 2001).

Another concern that kept faculty members from developing a positive view toward technology adoption was the lack of training. Technical training was greatly needed. With no or little training, faculty members might have suffered from a lack of confidence and competence, which may further discourage them from approaching technology. Increased technology proficiency would help faculty members become more open to implementing technology-based pedagogy into teaching (Stauss, 2005; Vodanovich & Piotrowski, 2005). Four studies emphasized the importance of tailoring the technology training to faculty’s needs (Mitra et al., 2000; Quigley, Church, & Peterson, 2001; Seay et al., 2001; Spotts, 1999). The current training often focused on how to operate hardware and software, which did not teach faculty how to embed technology into their curriculum. They were frustrated that what they needed was not
taught. In their study on the faculty need of information technology instruction, Quigley et al. (2001) pointed out that the instruction should go beyond simply listing the available electronic article databases. It could include directions on how to use the suitable keywords or how to use proximity operators and truncation. Mitra and Lenzmeier et al. (2000) demonstrated that faculty members are more positive about technology when they are able to incorporate technology into their curriculum. They also suggested that training can take various format such as seminars, in-house workshops, discussion groups, and retreat to workshops.

A third concern related to time limits. Time constraints had always been a limiting factor in faculty members’ acquisition and use of new technologies. Incentive programs like release time, financial reward, contribution to promotion and tenure, and recognition by the university were also highly valued by faculty members as they would encourage faculty members to re-prioritize their various responsibilities so as to free more time for the effort to adopt technology (Peluchette & Rust, 2005; Quick & Davies, 1999; Spotts, 1999; Spotts & Bowman, 1993; Spotts et al., 1997; Voakes et al., 2003; Vodanovich & Piotrowski, 2005). Release time would free them from teaching, research and student service in order to become more involved in technology learning. Monetary reward could be provided to stimulate faculty’s enthusiasm for learning technology. In addition, universities needed to show faculty members the potential benefit from using technologies such as contribution to promotion and tenure. They were not likely to spend time on learning and using technologies if no value from doing so is perceived.

The fourth concern that impacted faculty’s perception of technology related to availability of equipment and facilities. Availability and accessibility of technologies was
regarded as critical (Glasgow & Keim, 2005; Mitra & Lenzmeier et al., 2000; Quick & Davies, 1999; Spotts, 1999; Spotts & Bowman, 1993; Voakes et al., 2003). The most commonly conveyed message was that technology was not sufficiently available to meet faculty’s needs. Out-of-date equipment or equipment that was not readily available, such as those that have to be transported to the classroom, can hardly motivate faculty members to use them, extensively or regularly. Spotts (1999) commented “if an instructor has to spend 2 hours to arrange for, transport, set up, and take down equipment for one 50-minute lecture, they are not likely to use the technology” (p. 97). Community college faculty worried that they were not on the “leading edge” by having to use the older version of software while their students did their assignment with the newest product (Quick & Davies, 1999, p. 647).

Lastly, faculty members expressed concern about the effectiveness of technical support staff. Sometimes, faculty’s ability to utilize technology was hindered by their inability to reach effective technical support personnel, whose knowledge and experience with technologies is of great value to them. They can be onsite, available by phone or have office hours for problem solving. Faculty members in Quick and Davies’s study (1999) also wished that technology personnel could have some “people skills” (p. 650), which would facilitate their communications and cooperation. Figure 1 illustrates a comic embarrassing situation for a person seeking help with technical support staff. Mitra, Lenzmeier et al. (2000) also suggested providing faulty with access to trained staff associated with specific department in addition to the overarching computing support through the help desk.
Female faculty’s perception of technology was more influenced than male faculty by their students’ learning style, classroom relevance, time constraint, ease of use, and the amount of training received in using and learning new technologies (Crook, Yang, & Duemer, 2003; Ogan & Chung, 2003; Peluchette & Rust, 2005; Seay et al., 2001; Spotts et al., 1997). Ogan and Chung (2003) pointed out that although female faculty in journalism and mass communication were confident in and willing to use new technologies, they showed a stronger tendency than male faculty from these disciplines to perceive technology as a source of stress due to the following factors: out of date equipment, lack of training, inadequate support staff and time lost from technology failure. Men probably also experienced “TechnoStress” (p. 354), but they did not seem to be affected to the same extent as their women colleagues. Other stress more frequently indicated by women stem from concerns about time for research, what’s acceptable research for tenure, and perfection in performance. Though these stresses are not

Figure 1. Abrasive tech services © Quadhoppers by Kerry Soper.
technology related, they could affect women’s perception of technology, especially if a technology related initiative does not contribute to women’s career success.

Stressed over lack of time and technology training, female faculty indicated greater need for incentives like release time, merit pay, contributions to advancement or university recognition (Campbell & Varnhagen, 2002; Spotts et al., 1997). It was explained that since women were confronted with greater obstacles in their career advancement and were more vulnerable to risks such as engaging in technological innovation in higher education (Campbell, 2005), they treasured opportunities that would recognize their efforts in improving student learning and contribute to their own professional growth (Spotts et al., 1997).

**Connected Learning and Teaching**

The term “connection” has a long history within feminist literature, but it is still evolving in sophistication in its meaning and implication. In many cases, “connection” implies establishing and maintaining relationships with people. Work by Hayes and Flannery (2000) expanded the meaning of “connection” by proposing the ideas of connecting with self, connecting multiple voices (perspectives), connecting multiple modes of learning, connecting personal experience with knowledge, and connecting knowledge with action. These new themes may not be as self-evident as the theme of connecting with people, yet they are of no less significance in literature that addresses women’s ways of learning and teaching. The addition of these new themes can only help broaden our vision of the implications of “connection” in our educational practice.
The review below describes the connecting ways of learning and teaching by women from multiple disciplines. Focusing on women does not indicate that “connection” pertains to only females. This term is not distinguished by sex, but by one’s actual instructional beliefs and practice (Crabtree & Sapp, 2003). Males are equally competent in adopting the strategy of connection. Flannery and Hayes (2000) ensured that writing about women does not necessarily imply that women’s ways and men’s ways of learning and teaching were necessarily different or even the opposite. Although women can be different than men, such differences are by no means able to invalidate the overlap between the two genders, nor do these differences suggest one way is better than the other. Additionally, not all women fit into one genre and neither do men because each person is a creature of a uniquely different historical, social and cultural background. This review of literature is more focused on delineating a set of practices and strategies that women have intended to adopt for learning and teaching rather than on any comparison and contrast between men and women.

**Connected Learning**

Flannery (2000) suggested that women preferred a supportive and caring learning relationship with their peers. They tended to feel more comfortable in a learning community that offers care, support, cooperation and collaboration (Elliot & Woloshyn, 1997).

Elliott and Woloshyn (1997) described seven women professors’ experiences of engaging in collaborative projects with others. Central to these women’s experiences was building personal rapport before and throughout the project. For instance, Janis, one of the professors, and her work partners spent great amount of time and effort to establish
reciprocity. They gradually gained a greater understanding of the mutual benefit of this shared activity. Another female professor, Ruth, and her partner shared with each other their difficulties of juggling career and family, which appeared to create a bond between them. The shared concern by Helen and her partner about English education for future English teachers at the high school level built a foundation for their latter collaboration. The extensive talk gradually strengthened their feelings of loyalty to each other. Finally, Merle openly acknowledged her appreciation for the meetings with her work partners as well as other classroom teachers that participated their project. These meetings yielded “high-quality talk” (p. 29) where teachers discussed their problems and resolved issues.

There are occasions where some of these women felt uncomfortable due to lack of communications with their collaborators. Anne got involved into a project out of professional interest. However, she was frustrated by the scarcity of genuine negotiation of individual goals and needs, as well as scant sharing of personal experiences with her partner, a local school principal who actually imposed the partnership on Anne before a comfortable level of mutual understanding of the way to implement change in local schools was achieved. Implicit in Ann’s frustration was that a truly collaborative effort was to be achieved based on mutual understanding and agreement rather than one-sided wish or power. With both successful and unsuccessful examples of collaboration, this study illuminated the significance to women of a caring, supportive and equal environment that allows equitable interaction, dialogue, and collaboration.

A longitudinal study of college men and women by Baxter Magolda (1992) suggested that women were more likely to engage in “receiving, interpersonal and interindividual-patterns” of knowing whereas men were more likely to be “mastering,
impersonal, and individual-pattern” knowers (p. 189). Women tended to seek rapport with instructors and peers. They valued hearing peers’ voices and exchanging ideas with them. They embraced a diversity of personal opinions and expected the instructor to foster the application of knowledge in a context. This tendency was best illustrated by a direct quotation from Gwen, one of the participants in the researcher’s interviews.

They can sit next to me. I think it’s helpful just to have people around you, so if the teacher’s whizzing through stuff, you can quickly ask somebody next to you and hope they’re paying real close attention. It’s nice to compare notes and see how they take notes after class is over. As far as during class, I don’t really know what can be done without distracting the professor totally. (p. 32)

In describing how she benefited from peers’ opinions, she said,

Very diverse views, diverse opinions. It’s funny. You read the same thing, and yet people see three different stories or three different meanings or interpretations. And although you might have grounded yours, it’s very easy to see how they might have come up with that reading. It helps you either reaffirm your own opinion, modify it, or whatever is necessary. I’m rarely right on my opinions. Once I form one – a lot of times I’m kind of fuzzy about it – but when I do have one, someone has to give me a really good argument to make me sway a little bit from mine. In that case, all these other opinions of people help me form my own (p. 50).

Women scientists were also found to be connected learners and knowers. Rosser (1990) explored women scientists’ choice of problems for study, ways of formatting hypotheses, methods of data collection and analysis, ways to draw conclusions and theories, and their use of scientific information. Women scientists were found to have expanded their observations to include “various interactions, relationships, or events” (p. 38) not cherished by traditional science. They regarded personal experience of women as a valid component of experimental observations. They were inclined to consider relationship and interdependence as substantial components of problems, and thus were more likely to study problems of a “more holistic and global scope” (p. 44). Women
scientists accepted personal experience as a valid component of scientific research. As for the method of data collection, women scientists suggested a more intimate relationship of interaction between the observer and the subjects. Both qualitative and quantitative methods were valued. As women scientists tended to pay close attention to the interdependence between problems, they were also likely to draw conclusions that took into account the interaction of multiple factors in explaining their observations. In making research conclusions, women scientists drew evidences from multiple sources and tried to develop theories that are relational and multi-causal instead of binary. Finally, Rosser (1990) indicated that more women than men scientists chose occupations in science that empowered relationships with people, such as teaching. Women felt “teaching and talking with groups of people allowed them to feel less isolated and develop the relationships they desire” (p. 53).

In the business arena, Bierema (1999) conducted a case study that described executive women’s learning experience of organizational culture in a corporate environment. Within a male-centered culture, relationships proved to be empowering to women. They tended to learn through mentorship and interconnectedness with peers. The strengthened relationship with other women became a source of power in advocating changes of the corporate culture into a more friendly and hospitable one for women.

These examples illustrate how women learned through connecting with people, with subject matter and with diverse perspectives. Women preferred to learn in a caring and supportive community, not simply because they are in need of care or any special treatment, but because they valued an environment that allowed them to promote those multiple senses of connection.
Connected Teaching

Studies were also conducted to investigate the differences in teaching styles for men and women (Endres & Schiehorn, 1992; Hutchinson & Beadle, 1992; Lacey, Saleh & Gorman, 1998). They indicated that women preferred a collaborative learning and teaching communities where both the teacher’s and students’ diverse voices and perspectives are heard and respected. Women were willing to share their decision-making power with students by letting the students decide what and how to learn. They believed in the effectiveness of a cooperatively constructed teaching-learning process, where students actively participated in a process of collaborating with each other and with the instructor.

Davis (1999) illustrated a collaborative, constructive and experiential learning experience for her students. Based upon a basic framework she provided for class, she and her students collectively decided the parameters of the project for this course and negotiated what other materials and activities would benefit the students. Davis also joined student activities throughout the whole class term. Collaboratively, Davis and her students explored literature on feminist critique of traditional psychological research and reflected on the roles that experimenters played. They also collaboratively allocated materials for additional readings, coded schemes for their own research, designed role-play for interviews for different theoretical conceptions, and created guidelines for the interviews students would conduct. The class emerged as a collaborative adventure. Although the instructor claimed her expertise in how to approach research, she acknowledged her lack of experience in a specific topic area. Thus, instead of assuming the role of a boss, she actually contributed to the class projects as a team member. She
reported being successful in facilitating students in drawing on their life experiences by stimulating student-centered discussions and guiding them in building arguments that confronted divergent views. Thus, students were provided an opportunity to engage in active construction of their own understanding and knowledge of the course material. This process enabled students to learn to think critically and build their own arguments based upon their personal and their peers’ knowledge and experience so that they eventually would own the knowledge and use it in the future.

Middleton (1993) described her experience teaching a university course called “Women and Education,” designed to introduce the typologies of feminist educational theories. Class activity took the form of student-centered discussion and debate. Students were encouraged to develop, state, share and criticize each other’s theoretical positions, which would be used to analyze “an aspect of women’s education that was of particular relevance” (p. 110) to them. This way, students developed their own educational theories grounded into their personal knowledge and experiences.

In the field of science, the value of integrating learners’ personal experience into the curriculum was underscored by Rosser (1990). She suggested that learners would be interested in learning about phenomena and situations with which they had had personal experiences. For instance, science students would show higher interest with the course on inheritance of human eye color, blood type and hair color, which was perceived to be relevant than the course on cell or plant taxonomy. Students also preferred learning with familiar terminology and working with familiar equipment and subjects. Besides, they learned better if they could draw analogy between the experiment and their own life experiences. Students, especially female students, also valued such practices as applying
science in other disciplines, interacting with experimental subjects, keeping open to critiques of experimental conclusions and theories, and making connections between science and human beings.

As Rosser (1990) indicated earlier that female scientists were “connected knowers” (p. 54), they tended to seek connecting science with practical use, connecting experimenter and the object of study, connecting one scientific problem with other problems, and connecting science with human beings. Thus, they tended to support and implement the teaching and learning strategies preferred by students as mentioned above. In a way, the connection of women scientists to science is converted to the connection of students to science (Rosser, 1990).

Keyssar (1985) made a special effort to center her class called “Feminist Theater and Video Ensemble” around her students by intentionally undermining her own authority. First, she opposed auditions, which in her opinion underlined her role as an authority. Instead, she interviewed each interested students concerning their views of feminism, reasons for wanting to participate in the class and their skills. She also decided that men should be included in the class because she believed that feminism was not supposed to separate men from women but represents a set of values for the society as a whole. Secondly, she let the students decide on the script for production. By collaboratively working on the script, students learned about making choices on their own, as well as interdependently with their peers. They became the central agents for learning. Another effort to create a student-centered learning experience was mirrored in a power game played in one class session. In this game, students were asked to express their gender and the corresponding gender power under an improvised situation
according to the color of the card and the number on the card they received. For instance, number five indicated stronger power than number three. As it turned out, a person assigned number ten with a female role tended to express less power than a person with number five but with a male identity. This game brought home to students the impact of gender identification on their behaviors. Probably they had never paid attention to the way they talked, walked, sat, interacted or positioned themselves in a group until they had participated in this game.

Snoek (1985) shared his teaching experience as a male feminist teacher. He emphasized the importance of personal relevance of the reading material for both students and himself. In order to offer a place of safety for student discussion of personal feelings and experiences, he took the initiative to state his own reactions to the reading material, which he regarded as an essential step to set students free from hesitation for a frank and honesty revelation. Once the students were at ease, he would ask thought-provoking questions in an attempt to empower students in developing their interpretations of the reading case in connection with their own experiences. Another technique to help students understand the readings through personal experience was to ask them to tell others about their class, ethnic, and religious background. According to Snoek, later on, students would sometimes make reference to their own background to comprehend the class discussion.

Belenky, Clinchy, Goldberger, and Tarule (1997) offered a vivid portrait of connected teaching. Connected teaching valued first-hand experience in life. A connected teacher tried to connect with the students by entering their individual world to see what they see, hear what they hear and feel what they feel. She/he trusted students’ experience
as a powerful source of knowledge. A connected teacher did not fill students with knowledge as if they were empty containers. A connected teacher started with students’ knowledge and experience and helps them extend their knowledge. Connected teacher was also nicknamed “midwife-teacher” (p.217). A midwife teacher saw students’ unspoken thinking as unborn child. She/he carefully helped students give birth to their ideas, preserve them, and nourish them. She/he wanted these ideas to be students’, not hers/his. Connected teaching fostered student-student and student-teacher collaboration in the process of learning. It emphasized “connection over separation, understanding and acceptance over assessment, and collaboration over debate” (p. 229).

Connection and Instructional Technology

Instructional technologies can be used as supplements to the traditional face-to-face class or as a primary teaching medium for an entire course (Goldberg, 2005; Harasim, 1995). Either way, these technology options offer the potential to increase student-student and student-teacher interaction, distribute the teacher’s power among students, support in-depth communication and collaborative work. Campbell (2003) summarized the technology enhanced classroom as a relational, experiential and non-hierarchical environment.

Jones, Scanlon, and Blake (2000) found that computer conferencing fostered student centered collaborative learning by supporting such actions as sharing online documents, discussing course related materials, disagreeing with or confirming others’ argument, and asking fellow students for help. Bloomberg (2007) explored the impact of videoconferencing on Jewish students’ learning. Jewish students’ shared desire for
community was reinforced via the use of videoconferencing. Peer support was identified as a key factor facilitating learning. Students benefited from increased openness to new perspectives and growing critical thinking skill as a result of the collaborative learning opportunity. Buckingham (2003) discussed the role of online discussion in maintaining a learning community for nursing students. Students appreciated enhanced learning achieved by connecting with each other and learning about others’ experiences that they could compare and add to their own experiences. Students in a web-based course (Gabriel, 2004) were fascinated with the diversity of viewpoints from other learners which enriched their own thinking and insights. Students developed a strong sense of community through engaging in group learning activities, which also enabled them to grow in their perception and self-efficacy. Nachmias, Mioduser, Oren, and Ram (2000) also documented the function of web-based instructional environment in promoting collaboration and socialization processes among students. This learning environment allowed students to group read, synthesize and analyze learning materials, exchange ideas and opinions about key issues, collaboratively construct knowledge bases, produce group projects, and evaluate peers’ progress and contributions. Griffin and Anderton-Lewis (1998) reported email as a “safe house” for students. Email allowed instructors to provide students with resources and advice, comment on student assignments and answer students’ questions with greater availability and immediacy. Email also encouraged students to communicate frequently with peers and instructors, not only because it was convenient and fast, but also because the informality of the rhetorical style in email enabled students to freely express themselves without having to worry about tone or spelling, which empowered learners as contributors to the learning process. Hill, Raven,
and Han (2002) indicated that a web-based learning environment promoted a stronger connection between learners and the instructor and among learners. Learners enjoyed teamwork through which they asked questions, exchanged information, and shared knowledge and ideas. Sometimes, just casual chat online fulfilled a sense of community.

Some studies were conducted particularly from the perspectives of the faculty members on their experience integrating technology for teaching. In a series of studies, Campbell (2002, 2003, 2005) examined faculty members’ experiences learning to use technology and their values about learning and teaching that were embodied in their design of technology-enhanced environments. These studies pointed to a central desire of female faculty members for “connection” as learners and teachers. Female faculty indicated a desire for connected and collaborative learning communities that supported their action learning and reduced personal and professional risk. Women faculty members were also likely to embed their belief in connection and collaboration in their teaching decisions and practices with technology. Although they encountered tension in advocating a classroom of democracy, they strived to develop strategies to balance out the power difference between learners and themselves.

Turpin (2007) narrated her experience teaching writing with technology in a historically black university in an urban area. Her practice of technology adoption was affected by her positionality as a Black feminist teacher, the political atmosphere of the university, and the student population. She acknowledged sharing her students’ position within a system of western, male-centered institutions. She perpetuated her pedagogy with the notion of connection by breaking down the boundaries between students and herself as authority and empowering students by “nudge[ing]” (p. 13) them toward
discussions that took into account sexism, racism, and classism. Her virtual classroom was designed as a free space for students to explore their intellectual strength and develop critical thinking skill. Chatrooms and discussion boards provided opportunities to build “collaborative bridges” (p. 19) between her students and herself by allowing her to withdraw from the center stage and act as a facilitator and contributor to student projects. Central to her teaching praxis was to empower her students by encouraging them to relate knowledge with their life experiences and acknowledging their voices as intellectual and valid.

**Summary**

This review of the literature was conducted to: (1) synthesize the current state of knowledge regarding faculty perception and use of technology; (2) explore women’s preference for a connected approach to learning and teaching; (3) examine the potential technology offers to support the notion of “connection” in learning and teaching.

Recent literature suggested that women favored communication technologies that supported and extended their relationship with students and colleagues. For instance, email and discussion forums enhanced their contacts and interactions with their students and colleagues. Women placed high value in student learning. Women’s perceptions of the effectiveness of technologies were more influenced by their perceptions of their students’ learning styles. They were more likely to use technologies that met students’ needs. They were more willing to “overhaul their courses” to accommodate students learning needs while men tended to maintain their existing instructional methods.
regardless of their students’ learning styles or preferences (Campbell & Varnhagen, 2002, p. 47).

One angle to probe women’s use of technology is to look at the central location of the notion of “connection” in their teaching practice. Women faculty often distributed their power among learners for a collaborative effort to co-construct the curriculum. Women teachers frequently took off the crown of authority and became a facilitator of class activity or simply a team member. Women teachers were more likely to respect students’ personal experiences and encourage them to experiment with the new knowledge and apply it in their lives. Women teachers often practiced democracy where everyone voiced opinions and everyone was heard. Women teachers instilled in learners a holistic lens for relating multiple factors for a comprehensive understanding of a phenomenon.

These multiple meanings of the notion “connection” can be enacted through appropriate technologies. It was suggested that use of technology facilitated a higher level of student participation in class activities and a stronger sense of community, facilitated deeper personal interactions with each other and the instructor, and enhanced cooperative learning and group communication. It is important to note that technology itself does not necessarily connect. It is the underlying instructional method and instructional rationale that endow technology with the ability to connect: the teacher with students, students with students (multiple voices, multiple modes of learning styles), and subject knowledge with student life experience (draw on life experience and apply subject knowledge into their life).
Many recent studies surveyed student and faculty perceptions of the effect of technology on teaching and learning. Some researchers used case studies to investigate the effectiveness of one online course or the use of a particular type of technology like video-conferencing. While current literature on women faculty’s use of technology provides a good knowledge base, our understanding can be further expanded by looking beyond survey data and exploring specific dimensions of educators’ experience with technology-enhanced teaching. One such dimension will be women faculty’s understanding of the concept of “connection” and how technology facilitates this understanding.

Finally, I would like to share a word of caution against a misconception about the term “connection.” To many people, connection strengthens human relationship that serves as a nurturing “secure base” (Mahoney, 1996, p. 136). However, this secure base does not have to connote uncritical acceptance of whatever is voiced in the classroom. Clinchy (1996) suggested us viewing “connection” as a procedure we use to know instead of the result of our knowing. To make it more explicit, by taking a connected approach, we try to enter other people’s world in order to see what they see, hear what they hear, and experience what they experience. We do not ask for empirical evidence but are interested in how others’ experiences lead them to know the way they do. A teacher taking a connected approach to teaching is interested in learning about learners’ viewpoints and how these viewpoints are associated with their individual experiences and background. This teacher understands but does not necessarily agree with each of students’ perspectives. A connected approach does not demand unconditional approval or polite tolerance. Difference is eligible and welcome in a nurturing environment. But an
attitude of empathy would lend us the capacity to appreciate the strength in any point of view.
CHAPTER III

RESEARCH METHODOLOGY

Research Design – Case Study

Creswell (1998) defined case study as “an exploration of a bounded system or a case (or cases) over time through detailed, in-depth data collection involving multiple sources of information rich in context” (p. 61). Case study seeks intensive description, holistic explanation and in-depth understanding of a specific phenomenon, such as a situation, a program, an activity, an event or a person (Merriam, 1988). The central focus of case study is on interpretation and understanding of the process and the context rather than confirming a hypotheses or outcome.

Several characteristics constitute a case study (Hancock & Algozzine, 2006; Merriam, 1988). First, case study is used to catch the particularity and complexity of a bounded system (Stake, 1995). “Boundedness” refers to specificity in time and space. Guba and Lincoln (1981) suggested that the research problem affected the boundaries of the case. My research interest lies in how women faculty members understand and embed the multiple meanings of the notion “connection” through the use of technology. The bounded time for my study is the time period during which women faculty members adopt technology for teaching. The bounded space is within their classrooms, both online (if applicable) and traditional face-to-face classrooms. Contextual information such as the courses women faculty taught, their background and their general perceptions and use of technology is regarded as falling within the boundary. Second, case study is particularistic, focusing on a particular situation, event or program etc. I am interested in
women faculty’s understanding of the multiple meanings of “connection” and whether and how technology facilitates the connection. Third, case study is richly descriptive. It employs multiple sources of information and attempts to uncover as much interaction among varied factors as possible. To develop a thick description of my case, I gathered my data from several sources including interviews, class observations, self-reflection journal, and document review. I hope to provide my readers with a detailed description of the case as well as the interaction pattern among factors within it, which will give them a sense of being there. Fourth, case study is heuristic. The researcher is responsible for portraying the case as vividly and concretely as possible so that readers have a sense of being there. Case study is a venture in serendipity, one that requires facing the unexpected for both the researcher and readers who will eventually reach their own understandings based on their prior experiences. Readers’ understandings may differ from that of the researcher. I bear it in mind that once my research is finished and open to public scrutiny, I will lose control of how it is interpreted. “Every reading is, in a sense, a revision” (Goldberger, 1996, p. 6). Finally, case study is inductive. Case study questions undergo constant reformulation. Case study design is emergent and dynamic, open to change as the study proceeds. Without a precise plan for data collection and analysis, case study researchers remain responsive to emerging data, themes and concepts, and maintain sensitivity to alternative explanations and patterns that seemingly (or not seemingly) disconfirm preliminary hypotheses. Merriam (1988) suggested that “hunches, working hypotheses, and educated guesses direct the investigator’s attention to certain data and then to refining and/or verifying one’s hunches” (p. 123). Case study is concerned with understanding the process and context of human experience, which is
dynamic and ongoing. Therefore, exploring change is a pursuit of change. Patton (2002)
suggested that case study researchers “expect change, anticipate the likelihood of the
unanticipated, and are prepared to go with the flow of change” (p. 54). I started my
research with some tentative hypotheses concerning women faculty use of technology.
But, I have remained keenly aware of the possibility of encountering unexpected data and
themes and have adapted my research design accordingly.

I chose case study because it allows me to pay attention to the complexity of the
context and process in explaining the phenomenon in real life situations. It offers a means
to build thick description of the phenomenon and develop themes that illustrate
relationships between varied factors within the context. Case study helps me exercise my
sensitivity and tolerance for ambiguity. Case study permits me to recognize my bias not
as weakness, but as credit strengthening the transparency of my study. Finally, case study
validates both the researcher’s and readers’ interpretations of the phenomenon as, instead
of entitling the researcher as the expert, it strives to facilitate readers’ personal claim of
their own understanding of the case.

Theoretical Perspective – Positionality

The beauty of writing about women lies in its very nature of controversiality.
According to Alcoff (1988), the concept of women is an issue of significance and a point
of departure for any effort to foster people’s understanding about women and transform
women’s life experience.

While recognizing that diverse feminist perspectives have influenced my thinking
about women, I am most closely aligned with cultural feminism and post-structuralism
and am particularly fascinated by a middle ground stance between the two – positionality (Alcoff, 1988). These two perspectives are reflected in my self-affirming pride in women’s nature, in my conceptualizing gender as a relational and contextual social identity (Alcoff, 2006b), in my attention to the historical and social-cultural dimension of women’s life experience, in my recognition of both similarities and differences among women (Flannery & Hayes, 2000), and in my applauding the de-construction of such binary systems as men/women, rational/emotional, and nurture/nature (Tong, 1998). Finding these two theoretical perspectives illuminating, I do hesitate in entering into a total agreement with either of them. Below I will discuss how these two lines of feminist thoughts have expanded and constrained my horizon for viewing “women.” Alcoff’s work on the notion “positonality” (1988) that seems to resolve, to a great extent, the inadequacy of these two feminist thoughts resonates strongly with me.

**Cultural Feminism**

Cultural feminists sing high praise for female nature and essence such as caring, nurturing, relational, kind, gentle, considerate and peaceful. They believe that women differ from men on an essential basis, which means there are fundamental biological, psychological, and personality differences between women and men. They think these differences are unique and advocate establishing a women’s culture to celebrate women’s ways of being.

Cultural feminism proposes that feminine characteristics based on biology should not be devalued just because patriarchy has used them against women. There is nothing wrong with women’s anatomy. What is wrong is the determinism over women’s biological nature, which tends to attribute “everything to the workings of a changeless
biology” (Riley, 1983, p.2). Why should women be ashamed of their nature and their positive characteristics just because patriarchal ideology had manipulated it, by virtue of which, women are allowing themselves to be punished for the foolhardiness of patriarchy. Radin (1993) posed the question of what a dominant group in a society would want from a subordinate group. The answer is to make it “cooperative, empathetic, nurturing of others, self-sacrificing, noncompetitive, and nonaggressive” (p.1568). She suggested that these characteristics are associated with women and therefore should be stifled instead of espoused. I would argue that these characteristics are not and should not be exclusively attached to women and they are desired in men too. Even if these characteristics are exhibited prominently by women, they might have been developed as strategies for women to deal with the oppressive conditions (Alcoff, 1988), which notoriously disqualifies any attempt to have these characteristics manipulated for the purpose of justifying the exploitation of women.

As such, women do not have to hate men in order to be unique. It is not even necessary for women to be bothered by men’s definitions of women and take great trouble to rephrase the wording of that definition. Also, it is needless for women to put on a business suit or act like a workaholic so that they can be seen as genuine counterparts of men (although unfortunately this sometimes happens in reality). There is little promise for women to transform how they are perceived either by despising or pleasing men. Women are who they are, at liberty to worship their nature and essence.

A widely mentioned drawback of cultural feminism stems from its tendency to make a universal generalization about women and fail to take into consideration a complex network of history, culture, race, ethnicity, sexual orientation, and so forth
(Alcoff, 1988; Hayes, 2000a). Heterogeneity among women shows up at the crossroad of race, ethnicity, class, and sexual orientations etc. Belenky, Clinchy, Goldberger and Tarule (1997) described silence as a position of women feeling deaf and dumb and conforming with authority. For women of other cultures, silence can mean respect, politeness, a strategy in difficult workplace negotiations (Goldberger, 1996) or active cognitive activity (Schweickart, 1996). To understand what a particular “silence” means for different women, we have to look at both the “distant (cultural, political)” and the “immediate (familial, community)” (Goldberger, 1996, p.346) context for it. Additionally, I, as a woman, think our traits are not always ready to be perceived. Some of our traits are conditioned, by which I mean both men and women have traits hibernating under their consciousness and may be awakened under certain situations. For instance, women are often described as orienting toward “connection.” A stressful situation or the accumulation of unpleasant feelings about an event may lead women to separation. Whether the connecting trait varies from culture to culture is irrelevant here. What is relevant is that context can wake up in women a longing for distance. The same is true for men too. It would be touching to witness a man cry over what seems to sensitize only women – perhaps the memory of a hurtful experience or an emotional moment crystallizing into a breaking point that prompts his tears. So it would be difficult to attach a fixed set of traits to women because women vary across culture, race, ethnicity and even women themselves within a single culture can vary from situation to situation.

**Post-structuralism**

Post-structuralism takes a stance of deconstruction to overcome cultural feminism’s attempt to essentialize and universalize women’s characteristics and
experiences. It rejects the objectivity of language, discourse, knowledge and truth (Calás & Smircich, 1996, 2006; St.Pierre, 2000). St.Pierre (2000) summarized that to post-structuralists, language functions to differentiate one thing from another rather than representing any intrinsic characteristic. She pointed out that language not only names the existing but also creates and extends it into something new. Constantly shifting as language is, concept and discourse constituted by language is fluid, fleeting and contingent, depending on the historical and social cultural context that determines their meanings (Hayes, 2000a). In the same vein, knowledge and truth can’t be transcendent but are situated and specific. Many forms of knowledge and truths coexist (Strega, 2005). Thus, language, discourse, knowledge and truth about women can’t be absolute and finished. Post-structuralists posit that the concept of “women” is fashioned by language, therefore “dynamic and unstable” (Pierre, 2000, p. 502). It is the discourse and social practices that constructs “women,” a category open to construction and reconstruction (Calás & Smircich, 2006; Pierre, 2000).

Tisdell (2000) also summarized four key elements of post-structural feminist thought. First, post-structural feminism recognizes the diversity of women’s experiences as each woman is a product of the “intersections of multiple systems of oppression and privilege” such as race, class, ethnicity, age, sexual orientation etc., and therefore each woman has her own unique life experience (Flannery & Hayes, 2000, p. 13). Second, post-structuralists acknowledge that people develop their own truth and reality based on their unique life experiences. Third, post-structuralists emphasize the notion of shifting identity. Each individual is composed of conflicting tensions as one’s individual experience is influenced by the complex configuration of multiple systems of oppression.
and privilege, and therefore one’s identity including one’s values and beliefs is likely to change. As one’s identity is changing, one may develop new ways of acting in response to different situations. Fourth, post-structuralists call for the deconstruction of opposite binary pairs. They fault dualistic thinking for imposing polarized boundaries between such concepts as reason and emotion, men and women, mind and body, and nature and nurture (Tong, 1998). They reject imposing arbitrary singular meaning on each of these concepts. Tisdell (2000) illuminated how rational can become emotional. She suggested that one’s emotion and rationality keeps informing each other in the process of truth development. What is held as truth at the rational level will resonate with one at the affective level and what one feels strong can eventually develop into what one holds as truth.

The post-structuralist’s attention to the historical, social and cultural dimension of women’s traits, experiences and life is certainly insightful. Yet, such a focus tends to “degender” women by attributing the subjectivity of women completely to outside forces (Alcoff, 1988, p. 420). If reality is conjured up, experiences are described and all social identities are constructed, the concept of woman, in some sense, becomes a “fiction” (Alcoff, 1988, p. 417).

I share Alcoff’s concern that if “women” is totally a work of history and culture, there would be no classification of women and men as two categories of beings. Should there be a generic term for both? Grosz (1995) also questioned if there is a category of women if all is socially produced. Alcoff (1988) asked,

What can we demand in the name of women if “women” do not exist and demands in their name simply reinforce the myth that they do? How can we speak out against sexism as detrimental to the interest of women if the category is a
fiction? How can we demand legal abortions, adequate child care, or wages based on comparable worth without invoking a concept of “women”? (p. 420)

Positionality

Alcoff (1988) proposed the notion of “positionality” in relation to “women.” She defined “positionality” as a way of using habits, discourses, experience and events to analyze human subjectivity. Women are not to be defined primarily and purely by their internal essence, but also by their relative positions in various contexts. Enlightened by Alcoff, other researchers had explored this notion. For instance, Campt (1993) used “positionality” to examine Afro-German women’s experiences with the issue of race. Applebaum (2002) also found “positional” relevant in her exploration of the relationship between moral agency and social group location.

Positionality is a way of understanding “situatedness.” With this position, we start to learn about women not solely from their biological or psychological attributes but also from the context in which they are situated, i.e. social cultural and historical situation etc. Women are not to be defined primarily and purely by their internal essence, but also by their relative positions in various contexts,

The external situation determines the person’s relative position, just as the position of a pawn on a chessboard is considered safe or dangerous, powerful or weak, according to its relation to the other chess pieces….The positional definition….makes her identity relative to a constantly shifting context, to a situation that includes a network of elements involving others, the objective economic conditions, cultural and political institutions and ideologies, and so on. (Alcoff, 1988, p. 433)

Thus, women are not simply a fixed collection of “peaceful, gentle, passive, nurturing, caring, or emotional.” Rather, they can be brave souls like the Indonesia mother who risked her life to save her daughter from the bloody teeth of a large crocodile.
This mother later told the reporter that she did not know she could do this except she wanted her daughter. Without attempting to universalize women’s traits, I think a particular situation does provoke an action that the woman might not exhibit under normal circumstances. Figure 2 amusingly illustrates the various identities women could assume in various contexts. Sometimes, women can act against the social cultural expectations in their taking a female gender role. The lens of positionality allows us to understand people and events without having to solidify their essence. Thus, women are not simply a fixed collection of “peaceful, gentle, passive, nurturing, caring, or emotional” beings.

Figure 2. Is it hard to imagine? © Quadhoppers by Kerry Soper.

The lens of positionality allows us to understand people and events without having to solidify their essence. I want to borrow the prominent figure of Hillary Clinton as an example. She is a figure of controversy, with many aspects of her character seen as
opposite to the traditional stereotype for women. People think she is competitive, demanding, ambitious, dominant and tough. The celebrity biographer Norman King wrote that a glare from Hillary’s eyes freezes people. In a society still tinted with misogyny, a woman like Hillary Clinton can be intimidating. She appears too powerful to be seen as a woman. People cannot imagine how she could have held her tears in public when her husband’s sex scandal broke out. Smart, confident and gracious as Hillary Clinton is, she is blamed for being too unwomanly, for example, big teeth-revealing laugh or pantsuit-clad. Paradoxically, those characteristics that often make effective leaders are not helpful when she is running for the president of the United States. Underpinning this contradiction is the sex stereotype or gender schema, which is “a set of implicit or unconscious hypothesis about sex differences” that shapes people’s expectations about men and women’s appearance, behaviors, traits, their different roles in family and at work (Valian, 1999, p. 2). The example of Hillary Clinton illustrates the impact of gender schema on women. On one hand, women are expected to have a fixed set of traits in order to qualify for being women. The flipside is that they are also packaged into a level never comparable to men. On the other hand, when women are unlike women sufficiently to compete with men, they are faulted for being too masculine. Another example of the unfavorable influence of gender schema on women’s professional life is the Price Waterhouse v. Hopkins case (Fiske, Bersoff, Borgida, Deaux, & Heilman, 1991). Ann Hopkins had made extraordinary accomplishments at Price Waterhouse, an accounting firm, but was denied promotion for partnership for her “interpersonal skills problems” (p. 1050), underneath which was the implicit message that she needed to improve her femininity in how she talks, walks, and dresses. These
examples illustrate that when gender schema for women is incompatible with the 
expectation for a successful professional, women are likely to be negatively evaluated in 
their professional life. Should there be a solution that credits women based on their 
positionality?

To conclude, my viewpoints on people or issues are not solidified, and I would 
argue that nobody and no single issue can be a solidified and unified one. I think women 
can assume multiple identities that are expressed differently from different positions. A 
woman can exhibit either a strong and self-assuring voice at academic presentations or a 
soft and responsive voice at home as a wife, and these different voices are reflective of 
their different positionalities (Hayes, 2000b). We are to experience inconsistencies and 
contradictions among our multiple identities because we are always moving about 
different positionalities.

**Objectivity**

A “positionality” concept for “women” sheds light on the contextual variability of 
women identity as dynamic and elastic. The strength of this perspective is that it starts 
from context and situation in defining women, thus avoids the essential determinism 
found in cultural feminism. “Positionality” also allows women to construct and interpret 
their life experiences in light of situation, an interpretation of their history within “a 
particular discursive constellation, a history in which “women” are both subjects of and 
subjected to social construction” (Alcoff, 1988, p. 431).

Below, I want to briefly lace the concept of “positionality” with a notion of 
“objectivity” for a holistic understanding of women’s identity. Flannery (2000) talked 
about identity being influenced both internally as an unconscious process and externally
by family, history or social culture. Hurtado (1996) categorizes our multiple identities into personal identity that is constituted by psychological traits and dispositions and social identity constructed through socializing with culture and society. According to her, social identity can change from context to context while personal identity is more stable and coherent. Both theorists implied a point resonant with Alcoff’s notion of “objectivity,” which I think serves as an anchor that attaches a sexed aspect of identity to women.

Women differ from men initially in a single chromosome variable, which engenders other differences such as expectations and feelings with regard to the role of reproduction. Alcoff (2006a) suggested that “women and men are differentiated by virtue of their different relationship of possibility to biological reproduction, with biological reproduction referring to conceiving, giving birth, and breast-feeding, involving one’s own body” (p. 172). She argued that this different relationship remains true even for women who are not fertile or have no desire to be a mother, given the fact that material has to be obtained from a male and female in order to conceive a child. Alcoff (2006a) argued that this different relationship in terms of the division of labor in biological reproduction is a changeless fact, but not necessarily what it engenders. This differential relationship can generate different thoughts, feelings and reactions toward people, events, situations etc. For instance, a woman whose mother died at her birth is likely to have a different attitude toward pregnancy than her husband. Just hearing that giving birth to children is one hundred times as painful as menstruation may produce a different feeling in a woman than a man toward pregnancy or childbirth. Alcoff (2006b) used the term “horizon” (p. 95) to explain how women’s biological anatomy as a horizon affects their
gender identity. Thus, “the possibility of pregnancy, childbirth, nursing…rape” are evocative of different feeling and imagination in women than men “because of the ways in which we are embodied” (p. 176). From a particular angle, a woman is able to see and feel what a man is blind to.

It certainly can be argued that not all women would have exactly the same reactions elicited from their biological roots. I agree and think that all possible reactions vary from one to one and are open to boundless interpretations. Biology is just a fact that does not exist or vanish whether all women or only some women’s behaviors are dictated by it, whether in the same manner or not. Enlightened by Alcoff, I borrowed the book by Elizabeth Grosz, who offered a concise summary of this point,

There is an irreducible specificity of each sex relative to the other, that there must be at least, but not necessarily only two sexes. In short one lives one’s sexual indeterminacy, one’s possibilities for being sexed otherwise differently depending whether one is male or female, This is not, however, to predetermine how one ‘is’ male or female, but simply to suggest that there is an ineradicable rift between the two, in whatever forms they are lived….Each sex has the capacity to (and frequently does) play with, become, a number of different sexualities; but not to take on the body and sex of the other. (1995, p. 77)

When we make context-based (positionality) claims about women and still permit variability within a limited context, we allow the space for both biology and outside forces without having them absolutize every facet of human experience. Identity is fluid, and we are always in the process of finding, losing, shaping, and reshaping our identities. I take “positionality” as my epistemological lens for understanding not only women, but also men as well as everything.
Positionality and Connectedness

The focus of my study is on women faculty’s use of technology to support the notion of “connection.” Current literature often describes women as “connected” teachers and learners. “Connection” implies more than connecting with people. It also indicates connecting with self, connecting multiple voices (perspectives), connecting multiple modes of learning, connecting personal experience with knowledge, and connecting knowledge with action.

Flannery (2000) summarized current explanations of women’s preference for “connection.” These explanations are derived from multiple disciplines, such as physiology, psychology, sociology and socio-psychology, anthropology and politics. I defer aligning with a singular one or two of these explanations for understanding women’s orientation toward “connection,” because all of them could make sense depending on the context. For instance, it is possible that women enjoy relating with others out of a natural disposition. Women’s preference for connected learning patterns could also be due to a lack of sense of security in a classroom that values individualism and competition. Or women learn with each other because they are not confident in their capability as an isolated individual to accomplish their academic goals. Cultural influences also dictate whether one is drawn to connection. One individual woman can constantly engage in and disengage the connection mode for different reasons. For instance, a woman student who usually prefers teamwork may find individual-based work mode convenient depending on the subject matter. Another woman may love getting together with friends, but not when she is upset and needs time and space to ponder for herself.
Although my research focus is not on the theoretical explanation for women’s tendency to value and foster connection, I would like to make explicit the lens I use to view this matter. I pay more attention to the context in which “connection” takes place rather than strictly linking some previously determined natural attributes to “connection” for a hindsight discovery. The lens of “positionality” enables me to perceive the notion of “connection” as “positively constitutive” (Alcoff, 1988, p. 413)

Conclusion

The notion of positionality allows for a melting of the distinction between sex and gender. If sex is regarded as biological nature and gender as socially constructed product, then sex still forms the base for the social construction of gender and gender is definitely not entirely subject to the willfulness of its creators, completely detached from its sexual basis. In other words, sex and gender become a reciprocal horizon that bounds how each of them is interpreted. The notion of positonality recognizes both the objective and the contextual constituents of women’s identity, which contributes to a more elastic lens to understand and value women. When we adopt a positional view, we will not see women as a stale list of attributes, which has operated against a positive evaluation of them. Rather, we start from the position of women themselves and the different situations they are in while attending to their biological needs so that we are able to expect and embrace the irreconcilable yet complementary variations in women that traditionally had been frowned upon.

At last, I want to cite Calás and Smircich (1996) to end this chapter,

What we have written so far comes from a very specific time period and place in the world. As such, we don’t believe anything we write today will ‘withstand the
test of time’ or perhaps even endure…After all, we don’t believe in ahistorical, actuarial, universals. (p. 242)

This section is a product of my months of intense reading on feminist theories, my life history, my experiences as a woman, my observation of men and women, and my cultural and ethnic background. They constitute my identity that authorizes what and how I write about women. Recognizing the temporal and spatial dimensions of my identity, I am responsible for informing my readers that this chapter represents my understanding of women only here and now. I am open to further challenge and revision of my current and prior belief. Again, positionality!

Bracketing Interview

A Chinese student, Ms. Bin Liu, conducted a bracketing interview with me in May of 2009 to bring forward and examine my preconceived notions or assumptions on my research topic. This interview helped me become aware of my own biases and refrain from making judgments while describing participants’ experiences. Questions centered around my interest in my research question, my research background, and my theoretical perspective. The interview was transcribed and is included as Appendix B.

Pilot Interviews

In order to refine my interview questions and practice questioning, listening and probing skill, I conducted two pilot interviews that were semi-structured and open-ended. These interviews were conducted in the participants’ offices. I audio-taped all the interviews, transcribed them, and sent the transcriptions to the interviewees for a member check.
During my pilot interviews, I struggled with eliciting descriptive information of the faculty members’ teaching experiences with technology. I made a strong effort to probe more deeply by asking them “can you give me an example” or “can you describe that experience.” Sometimes, they had a hard time coming up with concrete examples. At times, I wasn’t sure how to proceed to probe for more specific description of their experience without making my informants feeling uncomfortable or pressed at that point. I practiced focusing on “how” and “what happened” or “what was that experience like” question in an attempt to elicit detailed descriptions in my formal interviews.

Another issue that required constant attention was ambiguous wording of some of my interview questions. For instance, one of my informants was not sure what I meant by “the connection between life and learning.” She also wondered if I was trying to learn about how she perceived her students’ learning objectives and learning outcomes by asking her to talk about her understanding of the meaning of “process of learning.” I was struck by how uncertain I was with my intention with some of my interview questions. The “how” question can sometimes be too general for the interviewee to bound their answers. For my formal interviews, instead of asking “how do you enhance your connection with students through the use of technology,” I asked my interviewees to share specific strategies in this regard with me.

The third issue that arose during my pilot interview concerned the expectancy effect. One woman faculty member pointed out that some of my interview questions required reflection and organization of thoughts and she suggested that I send my participants the interview questions in advance so that they would have time to do some quality retroflection. Seeing that I hesitated to consent, she further remarked that she did
not think my participants would need to lie to me or attempt to embellish their teaching experiences too much with the interview questions given in advance. I had been wrestling with this issue too. On the one hand, I wanted to obtain the most fresh thoughts from my participants on issues of my interest. On the other hand, I also wanted to hear participants’ in-depth thoughts on these issues. After weighing these two factors, I eventually convinced myself that it was appropriate to send out a summary of my interview questions in advance that would ground a mature reflection of their personal experiences without necessarily misleading them into the direction of my expectations.

**Initiate the Research**

**Recruitment**

I used a combination of snowball sampling and purposeful sampling. It was a snowball sampling because two women faculty members were identified through an online news article titled “USU Professors Awarded for Innovative Use of Technology,” which was forwarded to me by a friend of mine. Two of the three professors were women and I thought they fit my criteria of recruitment. I contacted them and they agreed to participate in my study. I used purposeful sampling in order to locate illuminative and information-rich informants who offered insights in the phenomenon of my interest. Most of my informants were recommended by instructional designers whom I initially contacted for suggestions of suitable participants for my study. I searched for a list of instructional designers and emailed them my inquiry. I was warmly invited to their staff meeting where I briefly presented my research proposal and answered their questions. After the meeting, I heard from the instructional designers who recommended a list of 27
women faculty members that they had previously worked with and might be interested in participating in my study.

I drafted and sent a recruitment email to these 27 women faculty members. Initially, three or four women faculty members expressed their interests in participating in my study. In the ensuing days, more women faculty responded. One woman regretted for not being able to participate in my study because she was on extended leave due to medical reasons. Another women faculty invited me to contact her later in case of a shortage of participants because she was extremely busy for the semester. Some also recommended the colleagues they thought that might fit my study. I finally allocated eleven women faculty members who would be available and who had expressed interested in participating in my study. As soon as I heard from them, I set up appointments with each of them at their convenience.

**Participants Background**

The disciplines and ranks of the participating women faculty members are illustrated in Table 1.

**Table 1**

*Women Faculty Participation by Rank and Discipline*

<table>
<thead>
<tr>
<th></th>
<th>Humanities</th>
<th>Education</th>
<th>Business</th>
<th>Science</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturer</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Professor</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Totals</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>11</td>
</tr>
</tbody>
</table>
Some women faculty members graduated from Utah State University and joined USU as \textit{alumnae} by working first at adjunct instructor level and later became full time instructors. Some were hired by USU as tenure-track professor after graduating from a tertiary institution or having taught in other higher education settings. A few women faculty indicated that the relocation to Utah was derived from a consideration of balancing between family and career. For instance, Betty chose to come to USU because it offered both her spouse and herself good professional opportunities. Besides, Utah was the home for her spouse’s soul. Carol chose USU because of its family-friendly policy.

Most participants had not taken formal coursework in technology. The one exception was a woman who had taken many courses in computer science due to the demand in her field for technical skills to develop assistive technology to help people with disabilities. However, the lack of formal learning experiences had not deterred many women from the excitement of trying different technologies. Many women faculty were up to date with computer programs, digital cameras, cell phones and were actively involved in online community networks such as Facebook and Twitter. Susan called herself as an “early adopter” of technology, who was always pushing the department to purchase new technologies. She was nicknamed as “Captain Kirk” because she wanted to “try things before they were available.” To her, technology was fun and occupied “a large part of my [her] life.” Linda was always eager to try new technologies because they were regarded as a “savior” by her for people with learning disabilities.

To some women faculty, technology might not have been so much an excitement as a necessity as it represented a trend in higher education setting and they recognized the need to prepare students to use technology in their future career and lives. These faculty
emphasized using technology effectively to improve their teaching and students learning. Their use of technology was primarily driven by their conscientiousness in meeting their students’ learning needs.

All participants went to a training center for assistance in integrating technology for teaching. They were satisfied with the effective and efficient services offered by the training center. They thought it was “wonderful” and “a huge resource.” Besides training classes offered, the training center website had begun to provide self-tutorial sessions on various software programs online in both PDF format and live video format. With this form of online assistance, some faculty members simply learned to use different technologies on their own by “ploughing through” the step by step instructions.

While realizing the helpfulness of the training center, some women faculty felt a need to incorporate pedagogy into their use of technology in meaningful ways, for which they could not solely rely on the training center. General workshop classes might not cover specific information that was tailored to their individual needs. The challenge is that the training center people are helping faculty members from so many disciplines that it is unrealistic to expect them to be knowledgeable about specific contents in numerous disciplines. In a way, the training center personnel are thus constrained in their ability to facilitate faculty members to embed technology into their specific curriculum.

Women faculty members were affected by several factors in their use of technology for teaching. The first factor was whether a technology would facilitate student understanding of the course material and increase student overall interest and motivation in learning. A second factor was time. Most women faculty reported that they were busy, so any technology that saved them time was welcome. For instance, creating
Blackboard courses might be time intensive in the beginning, but ultimately it had saved faculty tremendous amounts of time because they could build on and adapt previous lectures to different classes instead of starting from scratch. The third factor was ease of use. Many women faculty preferred to use technologies that they were comfortable with. A new technology with similar functions with but showed no evident improvement over the current technology being used was unlikely to appeal to them. Lastly, availability of technology affected women faculty’s use of technology. Many of them appreciated the use of “smart classroom” where a variety of media were at their fingertips. A list of explanations of all the technologies is attached as Appendix D.

Data Collection

Interviews

Interviewing is a major source for obtaining information needed for understanding the phenomenon under investigation in qualitative case studies (Merriam, 1988). I tried to arrange no more than two interviews each week, which would leave me sufficient time to transcribe them and maintain a continuity with questioning, elaboration and confirmation or disconfirmation.

Eleven interviews were conducted with eleven participants over a three-month-period. No follow-up interview was conducted. All interviews were scheduled for an hour, with some extending to an hour and half. All interviews were held at the participants’ offices. On the day of the interview, I often arrived at least 10 minutes earlier and waited outside the office to review my interview questions. Before each interview began, participants read the informed consent (Appendix A) silently and signed on it. I
guaranteed participants that only my committee chair and I would have access to the data. I also informed my participants that there were no “right” or “wrong” answers and their experiences were all valid sources of knowledge. I provided a gift card with $10 value to all participants as a gesture of my appreciation for their support. Most participants gladly accepted it. One woman faculty member initially declined it and said “it’s my pleasure to participate in your study. You really don’t need to do it.” I insisted that she accept this token of thanks and she consented.

I prepared an interview protocol that contained all my interview questions with wide space for me to jot down notes. I started each interview with a question on participants’ academic background that led them to teaching at USU. Our conversations evolved from their general view of learning and teaching to their perspectives on the concept of “connection” and finally to their use of technology for teaching. It happened that when both the participants and I were so involved in a particular topic that we naturally flew on to next topic different than the pre-determined order of my questioning. I readjusted my questioning order to maintain the smoothness and fluidity of my conversations with my participants. I also tried to create a conversational atmosphere by asking questions instead of “reading” questions from my interview protocol, though I did throw a glance at my interview protocol occasionally. As might be expected, some participants were more vocal than others.

Each interview was audio-taped and transcribed verbatim. Most of my interviews were hour-long, which often took me days to finish transcribing them. As my participants were from a variety of fields, the vocabulary they used to describe their courses was sometimes pretty strange to me. I first went to their personal websites or department
websites to search for information about the courses they taught and their areas of specialization, which occasionally helped me identify the unfamiliar vocabulary. I highlighted places in need of clarification and further details or examples. I sent each participant the transcript for a member check. They corrected grammatical errors, revised the content, or added information. Because my interviews were long and women faculty members were normally busy, sometimes it took them a month to revise the interview transcripts. My entire interviewing process became an evolution with any addition and revision of each interview guiding subsequent interviews. My interview protocol is attached as Appendix C.

**Classroom Observations**

I observed nine participants’ classes, six on one occasion and three on two occasions for the two different classes taught. The observations supplemented my interview data by providing a real-time portrait of the setting my participants taught in, activities they conducted, their communications and interactions with students, and their use of technology. During my interview with one woman faculty, she articulated some ideas that I was not quite clear about and she encouraged me to find the answer through my first-hand observation of her class, in what she felt was the best way to understand what she said.

For each observation, I always arrived at the classrooms earlier and slipped into a corner and remained as unobtrusive as possible. One woman faculty member introduced me at the beginning of her class and even asked me to introduce myself to the whole class. I was not sure how much my presence brought up by the unexpected incident had impacted student behaviors in her class. It took great concentration for me to observe
intently. One big challenge is that I am not familiar with the content areas in many of these classes and so I struggled to catch up with the verbal interchange between the teacher and students without a contextual knowledge of the course materials, who the students were, and the examples they used.

To the extent I could, I took notes on people’s verbal communications in the form of direct quotations, non-verbal expressions, like their facial expressions and body language and the activities conducted. I wrote down my questions and recorded my immediate reactions to the ongoing dynamic in the classroom on the margins of my notebook. During student group work, I leaned over to eavesdrop their conversations. Observation is an intensive task because the observer has to remain mentally and cognitively alert in order to catch the significant and relevant information.

**Artifacts**

Various artifacts such as course syllabi, handouts, PowerPoint slides, student exams, and one woman faculty’s manuscript were collected in the form of hardcopy. During my interviews, some participants also showed me student homework. These artifacts were used to supplement my knowledge and enrich my understanding of my participants’ experiences. For instance, I saw, from some women faculty’s syllabi, the detailed course rationale, explanation of assignments and projects, and assessment guidelines, which corroborates the information they shared at interviews on how they wanted to give students detailed instructions on the course related work.
Instant Reflection Notes

I had a notebook that records my instant reflections and thoughts that popped into my mind. I kept it everywhere. When I was awake, it was by my computer desk. When I went to bed, it was placed besides my pillow. Throughout this last year of working on my dissertation, my brain got excited at night. I often had to spring up from bed and jotted down my fleeting thoughts that came and left in a matter of seconds. It is the accumulation of these momentary thoughts that endow the scattered data with life.

Data Analysis

Data analysis is a process of data organizing, reducing, abstracting, combining, integrating, differentiating, dissecting and synthesizing. Prior to data analysis, I transcribed the audio-taped interviews and had them revised by participants. Data analysis happened interactively with my data collection phase and any preliminary analysis of my data served to guide my subsequent collection of data. I thoroughly read each interview transcript, my observation notes and the documents collected from my participants.

I first developed codes, which were “tags or labels for assigning units of meaning to the descriptive or inferential information” (Miles & Huberman, 1994, p. 56). As I read through each interview transcript, I gave a name to phrases, sentences or a paragraph that provided me with meaning. As new codes emerged, I came back to revise old codes, which often resulted in a new name for the code or splitting a code into several sub-codes. Then, I compared the similarities and differences between and among the codes to see
which codes could be grouped together. Grouping of codes gave rise to a primitive outline of the data.

Code grouping is an intuitive process in that the researcher has to decide which direction to go to seek regularities of meanings. Merriam (1998) likened this process with the task of sorting grocery items. Grocery items can be classified either by the scheme of “fresh, frozen, canned or packaged” or the schemes of “color, weight or price” (p. 132). Regularities among items give rise to a certain classification system. Thus, what kind of regularities to be detected by the researcher from the data is decided by what is more “important and illuminative” to the researcher according to “the utility, salience, credibility, uniqueness, heuristic value, and feasibility of the classification schemes” (Patton, 2002, p.466). The pattern development for my study is informed by my intuition of which kind of data grouping and regularities best illustrates and interprets my data.

The pattern development was also accompanied by two types of thinking: convergent and divergent thinking (Guba & Lincoln, 1981). Convergent thinking assists the researcher to hold data in meaningful ways for a theme. Divergent thinking sheds light on the possibility of extending a theme by including new information and connecting among groups of data. These two types of thinking were undertaken simultaneously and reiteratively.

**Interpretation**

Interpretation is concerned with elucidating information from all the collected data and learning what it means. The interpretation stage provided me with an opportunity to share with my readers what sense I made of the collected data. I tried to
illuminate the meanings of participants’ perspectives on and experiences with “connection” through a positionality lens. As I interpreted my data, I was aware of my gendered, racial, classical, and ethnical position that filtered my “gaze” into “the inner life of an individual” (Denzin & Lincoln, 1994, p. 12). Borrowing the metaphor of a kaleidoscope from Flannery and Hayes (2000), we look through the top of a kaleidoscope and turn it to different angles. As we rotate the tube, the pieces of colored glasses at the end of the tube will fall into a certain pattern, which will continue to change as we keep turning the tube. Our prior life experiences, our social cultural background and our personal values determine how far we rotate the tube and the ultimate angle that we look through at the glass pattern. Different glass patterns represent different versions we interpret the world. Back to my study, the resulting interpretation is my personal account and interpretation of the case. That is one of the many glass patterns I happened to see. My readers take all the liberty to create their own glass patterns. My goal is to “facilitate reader understanding by conveying to the reader what experience itself would convey” (Stake, 1995, p.39).

Verification

Merriam (1988) and Creswell (1998) suggested triangulation and member checks as two major techniques to verify data. The multiple sources of my data collection and revisions on my interview data from participants served to authenticate the dependability of my data. I consulted with participants on issues of confusion so as not to misinterpret their words. I communicated with my fellow Ph.D students and some committee
members about the bafflements I wrestled with and I sincerely appreciated their ideas that informed my work.

Potential Ethical Challenges

Throughout the process of conducting my research, several ethical challenges arose. The first one concerned my interactions with participants. One woman faculty complained that I asked too many questions by email, which violated the contract we initially agreed upon and signed. When my committee chair passed the word to me, I was taken aback. As hard as I can, I recalled that I did an one-hour-long interview with this woman faculty member and observed each of her classes once. Our email correspondence included my initial recruiting email, an email requesting for her revision a week after our interview, two emails to clarify the meanings of her words, one email requesting her syllabus and PowerPoint slides, and a final email asking for her clarification on her definition of “technology” that was sent after the four-month summer vacation. I was a bit puzzled that it was regarded as “too much”, because this study would not have come into being without these basic activities.

I think a distinct difference between quantitative and qualitative research is the relationship between the researcher and the researched. I would like to approach my participants as an eager learner and trustworthy friend to whom they can confide their stories. I also hope by listening to them, I have helped them relieve some hidden feelings and thoughts that they haven’t found a chance to vent, so that I am not the only one that benefits from our communications. Quite a few collections of qualitative studies that have inspired my pursuit of this paradigm are self-evident examples of a highly
interactive and collaborative relationship between the researcher and participants. I am not sure why I am expected to finish my one-time interview and class observations and leave the field forever, as indicated by the complaining message.

I can look at this issue from the angle of positionality. My puzzle derives from my own positionality as a Ph.D student with a particular view on qualitative research and the relationships between the researcher and the researched. This woman faculty also has the right to assert her positionality. She is extremely busy with numerous professional responsibilities and heavy family duties. As I recalled, she was quick in indicating her interest in participating in my study and she indeed provided valuable and innovative information. When I observed her class, she invited me to have pizza with her students during the break. I never got the sense that “I’m annoying” from our previous email correspondence except the last one. Looking at her positionality coupled with the vignettes mentioned above, a quiet voice whispered in my ear that “perhaps she was too busy” or “perhaps she just had a bad day,” and my feeling of discouragement dispersed away.

However, it remains an issue of caution. As a Ph.D student from a culture that respects the institutional hierarchy and with a personality that takes a long warming-up period to become acquainted with people, I had felt awkward with the task of establishing rapport and reciprocity with my participants who are professors and all of whom, except one, I had never met before. The only chance for our face-to-face interaction was our interviews. I remained silent at all classroom observations. While I deeply appreciate the support these women faculty members generously lent me, I feel more confined talking with them than with my fellow colleagues. In fact, I had constrained myself from being
too curious. Sometimes, I had to fuel myself with courage before sending out an email to women faculty to clarify ideas because I did concern that my questions might interrupt their work. In this case, I unintentionally made this woman faculty feel that I had taken more of her time than she anticipated. I recognize the significance of keeping acute sensitivity to research participants as a researcher so that I will not make my participants feel uncomfortable about our relationships. Thinking that my research participants are the most important contributors to my research, I will take great caution and care in our interactions and communications in the future.

A second ethical challenge dealt with confidentiality. The norms are that I as the researcher should disguise my participants’ names with pseudonyms to protect their identities. But by revealing the colleges they belong to and the courses they teach as well as borrowing the real life examples they mentioned, I am afraid they could possibly be identified, especially if they teach in a small department. Some of them touched sensitive topics that might create ethical problems when I report my findings in public. I tried not to mention the specific course names they taught.

A third potential ethical challenge related to the class observations. I don’t think my presence was detected by the majority of students in the three auditorium classrooms. The students in smaller classrooms noticed me sitting at back of the classroom. One woman faculty introduced me to her class. Another women faculty talked with me while circulating the classroom during student group discussions. I was a bit concerned that bringing my presence to the spotlight might have impacted on student behaviors. On the other hand, it is nearly impossible to stay completely unnoticed and it would be unethical to observe a class from behind a one-way mirror and thus stay unnoticed.
CHAPTER IV
FINDINGS

This chapter presents a synthesis of knowledge about women faculty’s overall use of technology, their understanding of the concept of “connection,” strategies they used to promote connections, and the role of technology in their effort to create and maintain connections. This knowledge is presented in descriptive themes that reflect participants’ lived experiences. There are three major themes: teacher-student connection, student-student connection and student life-learning connection. Each major theme consists of four sub-themes: women faculty members’ understanding of “connection,” their strategies to promote “connection,” technology may facilitate connection, and technology may interfere with connection. Table 2 summarizes the strategies women faculty members use to promote the teacher-student, student-student and student life-learning connections.

Emerged from the themes is a sense of positionality integrated in women faculty’s views of connection and technology. Their understanding of connections between the teacher and students, among students, and between student life and learning and their views of technology vary from one another and from context to context. They developed strategies that connected people and course content with life by, consciously and unconsciously, taking into account both their and students’ positionalities, consisting of both of their gender, class, race, ethnicity, personalities, life history, family situations, and classes taught and attended. By saying consciously and unconsciously, I mean that women faculty may not always be aware of their positionalities embedded in their perceptions and actions but their positionalities are the essential base for their personal
and social identities that indeed give rise to who they are. The connecting functions of
technology were greatly appreciated by women faculty, but rather than displaying a
uniform view of technologies, they noted situations where technology interfered with
connections.

Table 2

**Women Faculty’s Strategies to Promote Connections**

<table>
<thead>
<tr>
<th>Teacher-Student Connection</th>
<th>Student-Student Connection</th>
<th>Student Life-Learning Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questioning</td>
<td>Group Project</td>
<td>Sharing Personal Perspectives and Stories</td>
</tr>
<tr>
<td>Teacher-led Group Discussion</td>
<td>Student-centered Group Discussion</td>
<td>Real Life Project</td>
</tr>
<tr>
<td>Learning Students’ Names</td>
<td>Student Self-introduction</td>
<td>Cultivate Real World Attitudes and Skills</td>
</tr>
<tr>
<td>Be Curious about and Sensitive to Students’ Characters</td>
<td>Peer Evaluation</td>
<td>Respect Diverse Learning Styles</td>
</tr>
<tr>
<td>Give Feedback</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sense of Humor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Be Flexible</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Women Faculty Overall Use of Technology**

Women faculty members adopted a variety of technologies for teaching. They
were whiteboard, Blackboard™, Interactive Video Conferencing (IVC), Breeze, Internet,
Email, PowerPoint, I-clicker™, Smart Board, CD, DVD and VCR, document camera,
electronic course reserve, telephone, cell phone texting, Wimba, Camtasia, Respondus,
PDF annotator, and Jing. Below, I am going to briefly elaborate on faculty use of each of them. A list of definitions of technology is attached as Appendix D.

**White Board**

Mary was the only women faculty who made specific reference to white board. She used it when she was talking about a terminology that her students might not be familiar with and when she used numbers such as a particular year or date.

**Blackboard**

Blackboard is an online course management system. Most women faculty used Blackboard to post syllabus, lecture notes, readings, handouts, instruction for student assignments and class related videos that they wanted students to watch outside class, as well as assignment submission and grade book feature. Students can go to Blackboard to print out the instructor’s PowerPoint outlines and preview for the next class. They could also use these materials as a study guide to address their questions. For instance, if they remained puzzled after class, they could find some supplemental readings or watch a video posted by the instructor, which may facilitate their comprehension of the course material.

Besides being used as a resource depository, Blackboard was also used as a testing and assessment tool. Carol marveled at the testing function of Blackboard because it alleviated some of the burden of large classes. She had huge classes of up to 400 students. To give daily quizzes on paper could be exhausting. So she was one of the first who jumped on the bandwagon of blackboard and started giving online quizzes and tests. Students could easily access the test at appointed times for the designated duration, which
was time and labor efficient. Besides, students could track their grades online instead of emailing the instructor for information in this regard.

Linda often did reviews of previous lectures and recorded and posted the review videos on Blackboard. She was surprisingly delighted to find that both her on-campus and on-line students took advantage of this resource. Students loved it as a study aid. Susan and Ruth also recorded their teaching presentations while teaching online and face-to-face students. Ruth shared an experience that highlighted this benefit. She contracted pneumonia and missed classes for two weeks. So she just posted her teaching video that was prepared for her distance students online and her on-campus students listened to her lectures through Blackboard. Linda and Susan also noted that making these teaching videos available on Blackboard created a safe learning environment where students could access them as many times as they needed without feeling embarrassed.

Many women faculty also used the discussion and chat function on Blackboard to encourage student discussion of the course material. They often started a topic, and then asked students to follow up with threaded discussions of the topic. Some faculty members also encouraged students to manage their team projects via discussion board. The whole class can be divided into subgroups and have their own discussion topics. The chat function is similar to discussion board as a communication tool except that chat function works under a synchronous condition that requires both the teacher and students to be online simultaneously. Some women faculty members regularly checked students’ discussion unobtrusively unless they saw ongoing misunderstanding or confusion. Linda was pleased with a serendipitous effect of student discussions. By reading students feedback on other instructor’s teaching, she was motivated to constantly reflect and refine
on her own teaching practice. In a way, discussion boards became a learning terrain for both her students and herself.

Besides all the functions mentioned above, Blackboard is the ultimate resource for distance and online students. Both the instructor and students completely relied on blackboard for teaching, learning and communicating. Susan, Laura and Linda put all course related materials on Blackboard. Students participated in online discussion on Blackboard. They graded students’ assignments and tests on Blackboard. They communicated with students through email or other online audio or video conferencing tools. Both Linda and Susan made exactly the same comment about Blackboard in this regard “is everything” for distance and online students.

**Interactive Video Conferencing (IVC)**

IVC technology allows students at different locations to take the same class in real time with a same instructor through two-way audio and video. A flat panel television in front of the classroom shows the image of the instructor and possibly PowerPoint presentation slides. Both the instructor and students need to use a microphone to speak. When a student speaks, the camera will zoom in the student’s image.

An earlier version of IVC only allowed students to see the teacher but not vice versa. It blocked the teacher’s effort to create connection with students. The new version of IVC with improved visual and audio capabilities allowed the teacher to have a two-way visual interaction with students, which established a better sense of connection between the teacher and students. Women faculty members used it for distance education and they had mixed feelings about it, which will be detailed in a latter section.
Breeze

Breeze is also known as Adobe Connect, a web-based software package used to create information and general presentation, web conferencing, learning modules and user desktop sharing. Three women faculty taught distance classes with Breeze that allowed them to have synchronous meetings with students. Faculty members and students were connected by the camera and voice function in Breeze. Faculty members could also display PowerPoint lectures and other documents by sharing her computer screen with all students participating in the meeting. Students were also able to share documents with each other. Breeze offered a chat function that enabled students to chat with the faculty and each other.

Susan made great use of the whiteboard in Breeze, where she could draw lines and shapes, change colors, and demonstrate to students the application of a math formula or equation. Some faculty members recorded the connect meeting and posted the video on Blackboard for students to watch afterward, particularly for those who had missed it.

A challenge frequently mentioned by women faculty was when students could not hear them due to technical problems. Nancy would need a technician sitting by her to take care of the issue so that she could focus on teaching. Sometimes, students forgot to turn off their microphones when they had finished speaking, so a funny scene appeared that the instructor could hear “a baby crying” or “a dog barking.”

Internet

All women participants reported that they loved to use Internet for spreading and conveying information. Quite a few used YouTube to share videos that highlighted the course materials. For instance, Sharon used YouTube to play videos that illustrated the
challenge of managing elementary classrooms. Linda took advantage of YouTube to show her students what people with learning disabilities were like.

Another way of using Internet was to ask students to check websites that would help supplement and expand their learning. For instance, Mary was teaching a culture class, and she often pulled out websites to show students where some countries were. Nancy, working as a teacher educator, invited students to create social class plans and post their work online.

**Email**

All women faculty used email to communicate with students. Email was an efficient venue for them to answer students’ questions about assignments and tests, remind students of due dates of assignments, clarify students’ confusion about course materials, and inform students of upcoming events or conferences related to class. Faculty members tried to reply to students’ emails soon, but sometimes not surprisingly, it became a burden to promptly respond hundreds of emails especially for those with big classes.

Donna, Carol, and Laura noted that their students were more comfortable emailing them rather than stopping by their office. Carol joked that “I’m scary“ to them. But she could converse with students who did stop by not only about their studies but also about their lives. When students were going to miss class or could not submit assignments on time, they often chose to email rather than talking to faculty members in person. They hid behind email.

Kimberly was concerned about not being able to catch up with students’ emails. She had big class of over 200 students and she was packed with multiple responsibilities,
such as being a journal editor and attending conferences. When she was unable to answer all 200 emails in a day, students could get annoyed.

**PowerPoint**

All women participants used PowerPoint. The most prevalent purpose for using it was to keep themselves stay focused on main ideas of their lectures. Some expressed the view that “It was a good boss to keep them from getting side tracked.” Many women faculty incorporated cartoon, images, video and audio clips, website links and quotes into PowerPoint slides for their teaching. Kimberly was not satisfied with her current use of PowerPoint and would have liked to explore this technology further in order to make her lectures more engaging. Betty not only used PowerPoint herself but also asked her students to use it to present their final project.

**I-clicker**

I-clicker is a portable handheld device that allows students to respond to an instructor’s questions by clicking appropriate choice buttons on the remote transmitter. The instructor can receive students’ votes and display the voting result in a graph. Two women faculty members extensively used the I-clicker in class. Both Laura and Carol had big classes. They used it to encourage student attendance. Laura was also pleased with the I-clicker as an innovative tool to break up her lectures, which made class more fun for students. To Carol, the I-clicker became a monitor that displayed students’ instantaneous feedback about their knowledge and understanding of the course materials so she was able to adjust her teaching speed and presentations to suit student needs. Her students were motivated to read the textbook prior to class because they got extra credit for
answering the I-clicker questions correctly. Both women faculty members appreciated the I-clicker’s ability to generate discussions among students by allowing them to see and consult how their peers thought.

**Smart Board**

It is an electronic type of whiteboard that comes with a projector and other accessories. The instructor can control the computer action by tapping, writing or drawing with fingers or a PC pen on the board. With the integration of Smart Board, instructors can create dynamic learning situations that encourage active students’ involvement. For instance, Linda remarked that students’ ability enabled by Smart Board to interact with visual materials reinforced their learning. Nancy commented that Smart Board was a great tool that allowed her students to manipulate the map projected up from smart board.

**Telephone**

Quite a few women faculty observed that their students often did not use the option of making phone calls to talk to them. Betty was the only person who mentioned the telephone as an effective communication tool with her students. She taught a distance course to multiple sites in the state. She made herself steadily available during her office hours and her students would call her for counseling on questions.

**DVD, CD, VCR**

Many women faculty used CDs to play music and used DVD and VCR to play documentary, case study and movies. Donna often played music in her music education class. Sharon used music CD to teach about classical conditioning and reinforcement.
Kimberly occasionally showed her students ethnographic film clips. Ruth played case studies with a VCR that illustrated the course content. For instance, she played a case of job interview in order to contrast appropriate and inappropriate behaviors during an interview. Carol loved movies when she taught about extraterrestrial life in universe because “Nobody does a better job than Hollywood” in depicting alien life.

**Document Camera**

The document camera is also known as digital overheads to display text or photo on a screen in the classroom. Sharon frequently used the document camera, two to three times each class period. She used it to go over quizzes, display cartoons and quotes that illustrated the course topic. Occasionally, she placed white paper under the camera and drew a concept map that was projected on the screen for her students to follow. Mary often used the document camera to show images that were not available on Internet, an immediate convenience highly recommended by her.

**Course Reserves**

Many women faculty members posted their teaching materials on Blackboard. Mary preferred to post readings on course reserves via USU library page because she wanted to avoid the hassle and inconvenience at times of blackboard breakdown. She wanted to make sure students could access the reading resource at all times.

**Cell Phone Texting**

Sharon was very interested in communicating with her students through message texting on a cell phone. To her, it was a way to keep connection with her students. Her students often texted her class-related questions such as those about an assignment and
she texted back her response instantly. Sharon was willing to satisfy her students’ need for promptness at her own cost.

**Wimba**

Wimba is an audio component to Blackboard courses that enables users to record voice announcements and audio blogs, send email messages with embedded audio and conduct live voice chat. Susan often used Wimba to host her online office hours for online students. Her students could talk to her through a microphone or text chatting.

**Camtasia**

Camtasia is a video capture program used to record the computer screen. It can also be used to record voice along with PowerPoint slides. Susan was teaching business statistics. She often needed to show her students how to use a certain statistical software application or walked her students through the process to apply an equation or a math formula. So she used camtasia to record her demonstration process and posted the video on blackboard.

**Respondus**

It is a test generation tool. Susan used respondus to build quizzes in Blackboard. She showed me how she formatted her questions and answers, and then published them on Blackboard. She regarded respondus as “very very wonderful.”

**PDF annotator**

It is a software program that lets users comment and add annotations on any PDF file. Susan loved this program because it allowed her to grade students’ assignments and
quizzes online. She used a PC pen to write comments or mark highlights on students’ assignments to draw their attention.

**Jing**

It is a screen-casting software used to capture a picture or video of a computer screen. Susan used Jing to record images that demonstrated her teaching. It was a quick way to show her students how to do statistics. She admitted that the video quality made by Jing was poor but it was free.

**Teacher – Student Connection**

**Women Faculty’s Understanding of Teacher-Student Connection**

The women participants jointly indicated that the teacher-student connection was a “huge part of learning,” was “really integral into learning,” was “needed for engagement” and “engagement is needed for learning.” “Connection is a dear word to me,” Mary said, chin in hands with her eyes lit up with sweet memories. She taught a mentoring program called “Connection,” which advised first-year college students how to succeed in college.

In these faculty’s views, connection took root in care and love. They wanted to show the students their genuine interests in students’ interests and their belief in students’ ability to succeed. It grew in a safe learning environment where students would not fear making mistakes, feel embarrassed of asking questions or hesitate to share personal viewpoints. Women faculty indicated that teacher-student connection thrived when both their students and themselves were endowed with life. They wanted to present themselves as approachable human beings. The students were not empty buckets waiting for the
pitcher (teacher) to pour in information for them to store. Instead, they were also human beings with a world of life experiences and histories, which formed their positionalities that would mold their perception and understanding of knowledge.

Women faculty and students formed a learning community that permeated a nurturing rather than a competing atmosphere among diverse perspectives (Belenky et al., 1997), valued the meanings everyone made of his/her life, and collaboratively constructed innovative interpretations of puzzles and conflicts that might counter against the traditional view but bring life home to students. This mutual process transformed teachers into students and students into teachers by equating the teacher’s position with students’ position. It boils down to what Kimberly summarized that the teacher and students are really “co-learners on a common path, the common path of learning, a path of understanding, a path of dialogue, a path of sharing, a path of learning from one another, a path of valuing, respecting, sharing our life experiences as well as the insights and wisdoms we have gained through our own readings and background.”

Under certain contexts, women faculty perceived that the teacher-student connection did not always unfold as ideal. For instance, the teacher’s role as a scary authoritative figure might have been deeply ingrained in students’ minds so they could position the teacher high up in the hierarchical ladder; maybe students felt stupid by raising questions in public by positioning themselves at the margin of class discourse; or maybe students were simply too busy or too shy. So they ignored the teacher’s invitation for a visit during office hours, chose to sit at the back of the classroom for easy escape from teacher’s attention, and waited until the last minute of the semester to voice their opinions of the course quality by writing anonymously on the evaluation sheet instead of
conversing with the teacher face to face. Some women faculty members were puzzled by students’ persistence in hiding from them, despite their repeated good-faith effort to establish connection.

Specific examples that illustrate women faculty’s shifting perceptions of the shifting teacher-student connection are shared below. Many of them thought that the teacher-student connection developed and bloomed with close ties between the teacher and the students. This tie was surely delightful but risked breaking apart if stretched too far, which may happen when students attempt to shift their positions closely to the teacher’s position amid the growth of their connection. Linda emphasized keeping flexibility between what was acceptable and what was not. She claimed having a close relationship with students, which could be attested by her students’ preference to visit with her face-to-face, and the frequent emails students sent to her appreciating her help or updating her with their recent progress. But a close relationship did not grant everybody an “A” or lower Linda’s expectations for her students’ academic performance. She refused to position her students as equal to herself by frankly denying the expression “sharing authority” in favor of “sharing some decision-making.” Linda grounded her authority in her extensive content knowledge and experiences. But she was not positioning herself extremely far from her students under certain circumstances. For instance, she was willing to adjust the time and format of an assignment or an exam to accommodate student needs. She also took it as her responsibility to help her students meet her expectations.

Similarly, Sharon also carefully positioned herself in her relationship with her students. She did not mind her students’ attempt to negotiate class related decisions with
her, but there was a line that they must not cross over. When students got “pretty close to that line,” she made it clear “I am the instructor…I will encourage you and I will cheer for you, I will help you and assist you. But I am still the instructor. My role, my position in that classroom is that I have an authoritative perspective.” Students could certainly ask “can we not have the quiz today?” Sharon held the key. She noted that the line was drawn out of a good intent that “It’s really the right thing” for students rather than the fact she was the one “standing in front of the class.”

Two other women faculty members’ experiences of relating to students highlighted the elasticity embedded in the teacher’s position in relating to students. Laura was friendly with students, but she insisted that “don’t ask me out to lunch. I am not your friend.” As a young professor who was not much older than her students and someone with a relaxed demeanor, she was careful in creating a boundary between her students and herself. She signed emails with her last name after the title Dr. She did not go out to lunch or coffee with students. She would answer academic questions and ignore personal questions such as “How’s your husband?” or “How’s your dog?” She only added students who already graduated on her Facebook community, an online communication network, as they already established a different rapport with her. Laura reiterated that she was friendly, but not too friendly. Figure 3 pokes fun at students trying to ingratiate themselves with their professors.

Betty never felt the need to distance from her students but she ran into a few extraordinary situations that raised her awareness of the delicate nature of a teacher’s position in teacher-student relationships. She juxtaposed between a professional position that helped students with school work, job search and resume etc. and a mothering
position that played into a more private sphere of students’ life. Her professional position as a professor was distinguished by an easygoing, joyful, humorous and open-minded demeanor. As soon as she entered the classroom, the room lit up with her brilliant smile. She chatted with students light-heartedly, was genuinely interested in everybody’s viewpoints, and always took a supportive and believing attitude toward student feelings about things. Her intense interest in connecting with students seamlessly married her mothering position to her professional position. Although both of her two positons were respected and appreciated by students, Betty thought that they needed to be carefully bounded.

Figure 3. Students buttering up professors © Quadhoppers by Kerry Soper.

Her mothering position was at its height in two situations. In one situation, one of Betty’s students called her at home at three in the morning asking for companionship because she was emotionally distraught by the death of a family member. Betty rushed to
the student’s apartment, put a cold rag on her forehead, and sat with her for the rest of the night. The next day, the student flew back home in the eastern U.S.

In another situation, Betty tried to help one of her students to treat a mental condition by going with her to the counseling center, patiently looking for a medical professional that fit the student’s need, and inviting the student to stay in her house for a few weeks. Some of Betty’s colleagues were concerned that this student was “jerking” Betty’s “chain.” Betty chose to trust the students a bit further, and she later was convinced that this student was not taking advantage of her. Betty confided that she was glad to look out for students under unusual circumstances, but these certainly were not the norm and “you have to decide what is appropriate.”

There is no criterion for the nuances of what is appropriate. The teacher decides how far she is willing to go. The teacher-student connection does not stay static. It fluctuates, springs, and bounces. It is born in care and love and nurtured by reciprocal respect, encouragement, support and trust between the teacher and students. However, this connection does not exist without rising and falling. It is a piece of violin string that will break if stretched too far but will fail to produce melody if set too loose. The teacher-student connection glides between distance and closeness alternatively in light of both students’ and the teacher’s shifting positions and it takes artistry to bring them into harmony. Distance may evoke feelings of strangeness and remoteness. Closeness may subvert the balance of the teacher’s power. With some room, distance and closeness maneuver and intermingle until a comfortable state of relationships has emerged. When well-suited and well-timed, distance serves to lubricate the teacher-student relationship while closeness vitalizes and nourishes it. Like the mellowness of wine that penetrates to
the heart only with little sips, the comfort of the teacher-student connection does not ease in without a faithful effort to adjust and modify between distance and closeness, little by little.

Women Faculty’s Strategies to Promote Teacher-Student Connection

Many women faculty members expressed their understanding of the word “connection” by telling strategies they used to promote their communication and interaction with students. They tried to create a productive and safe learning environment where both their and student voices were heard and respected, students diverse learning styles were catered to and their interests in learning were boosted up. These strategies include questioning, teacher-led group discussions, learning students’ names, being curious about and sensitive to students’ characters, giving feedback, showing sense of humor and being flexible.

Questioning. Many faculty members questioned students to get their responses and viewpoints, which enabled them to gauge student understanding of the course material. Ruth asked students to collaboratively come up with elements essential for a resume. Questions were also posed to allow students to draw on personal experiences, to which many people in class could relate and were inspired from. For her educational class, Sharon liked to use personal situations to frame her questions, such as “Tell me what’s school like for you?”, “What did you like in 2nd and 3rd grade?”, “Was it the teacher that you value?”, “What were they like?” These questions provoked her students to think from their positions about what kind of teachers they would like to be in the future and how they should treat their future students. Carol was teaching energy
conservation, a topic frequently encountered in real life. She stimulated student discussion by asking “Why do we use fluorescent lights?” “Why do we use high-mileage cars?” “Why do we conserve energy?” and “What actions lead to heat losses in a house?” Donna was teaching music education. Some of her students were future elementary music teachers. Her questions not only served as a check of students’ knowledge but also a prompt to inform students of the rationale of her teaching behavior. For instance, the question “Why do I avoid rhythmic movement activity with young children?” alerted her students that it was not easy for young children to follow rhymes; therefore they should carefully design teaching activities with their future young students when they assume the position of music educators. Kimberly held round-table discussions with her students. She posed a question and students jumped into the discussion while she mainly remained quiet with occasional redirection of the discourse. Her aim for questioning and opening student discussions was to instill in them an awareness of their own philosophies and their own ethno centralism and the importance of taking people’s understandings of their worlds, an attempt to sensitize students to some aspects of their positionalities within the social cultural structures.

Questioning took tact. Sometimes the same three or four students always had their hands in the air or dominated class discussion. To break up the pattern, Mary would say “Today I want to hear from someone who has never said anything in class” and just kept waiting until somebody would volunteer. She was careful not to call on people at random as she explained with a witty wink “Sometimes people are petrified and the day you call on somebody at random is the only day they did not prepare.” Mary was also good at waiting to elicit more students’ responses to her question. When nobody volunteered to
speak, she would stick there and smile and repeat “any question” until students felt too uncomfortable to stay silent.

Questioning allowed students to create their own understanding of the course materials based on their own and the diverse perspectives of their peers. Knowledge constructed in such an environment often called attention to multiple and juxtaposed positions with regard to students’ personal life experiences. The teacher did not expect a unified responding pattern from students, rather, they recognized different positions among students and developed strategies to accommodate these differences.

**Teacher-led group discussion.** Women faculty members encouraged students to get into small group discussion before opening the discussion to the whole class. They sometimes provided guiding prompts for the group discussion and would circulate around the room to make sure everyone was actively involved. Mary often reminded class that they “have to make sure that everyone in your group has said something.” She sometimes required students to write on a topic before class, so students arrived in class with thoughts to share. To these women faculty members, small group discussion helped create a comfortable and non-threatening learning environment where students could exchange ideas and clarify confusions before reporting to the whole class. Students did not appreciate being called on unless they volunteered to speak. Additionally, group discussion accommodated some students who learned by “interacting and bouncing ideas off peers” besides reading and listening. Like the strategy of questioning, teacher-led group discussions provided an opportunity for diverse ideas and knowledge based on students different positioning to interact.
Learning students’ names. A majority of women faculty members recommended learning students’ names as a strategy to promote their connection with students. Linda made it a goal to know the names of all her students by the end of semester. Susan made “a really large effort” to remember students’ names in her interactive broadcast class. She liked calling on people by their names, so that she can call “Tammy” in Honey city and invited her to answer her question. To Susan, calling students’ names personalized the learning atmosphere.

Learning students’ names can be a challenge for teachers with big classes. The more students they have, the worse they do. Carol was sad that she did not know the names of her over 100 students. She lamented “at some level, that’s a loss.” But if she ran into students in town, they would have the “I was in your class” moment. Sharon regretted for not being able to know all her students’ names, which she openly admitted as against what she was teaching, which was “get to know your kids, get to know their names, know what they are really like, what’s happening in their lives.” She might be able to remember 30 to 40 students’ names, but not 80 to 100.

Be curious about and sensitive to students’ characters. Women faculty members’ intent to know their students was a gesture of recognition that “Students have a life outside of being a student.” Knowing that students came with a world of knowledge and experiences out of which they constructed their unique world views, Susan made it an assignment for students to visit with her and ask her questions, anything such as “What color is the carpet in your office?” Laura also “forced” her students to meet her at least once a semester. She would like to chat about anything, ranging from school work
to their future career plan. Laura really took advantage of this opportunity because it allowed her to know more about those who “don’t say much or never speak in class.”

Donna held help sessions for students when class was cancelled. Students were more likely to come to the help session than come to her office hours. Shy students benefited from help sessions where they didn’t have to ask questions before the whole class. This safe environment made it possible for students to reveal their thoughts to Donna, which they hadn’t been able to do in class.

Getting to know students is a mutual process where both the teacher and students are expected to open their hearts. For instance, Laura not only invited students to share their personal background, but she reciprocated by posting information about her family, dog etc. for her online students. Susan also posted her picture to give her online students a sense of her look.

Mary, Sharon, Carol, Susan and Linda related to students by keeping sensitive to their multiple learning styles and personalities, which partially formed students’ positionality. For instance, Carol was aware of the various ways students learned, so she designed a variety of activities to tailor instruction to students’ different needs for listening, speaking, reading, writing or interacting with people. As it was often not possible to carry out all the activities in a single day, Carol managed to balance her activities on a broad scale throughout the week so that everybody could survive. Susan organized her practice activities based on students’ learning styles, whether they were visual, auditory, writing or kinesthetic learners, they had the option to choose practice activities that made most sense to them. Linda credited her close relationship with
students to her strength in responding to the personality of students, which she admitted entailing “a little more work,” but was a worthy investment.

For her culture class, Mary managed to take into account students’ positionalities by choosing readings for them based on their interests. She explained,

They are undergraduate students… I try to make sure whatever they are asked to read is not at the very super high academic level that turns everybody off. If after the first two paragraphs they say ‘I have no idea what it’s about,’ you are not supportive of their learning. You’ve prevented their learning.

Sharon watched and listened to her students in order to learn “what’s important to them” because she was motivated to be “up on the latest” so that she could “talk their talk and use some of the information to connect with them.” Although she thought YouTube was “goofy,” she used a lot of YouTube videos that related to the course because her students loved to see the newest and latest videos. Because her students loved texting, Sharon was willing to add texting on her cell phone plan at her own cost because it allowed her to respond to students instantly. Sharon illustrated a successful example of bringing her and students’ positionalities into harmony.

**Give feedback.** Many faculty members gave lots of feedback on students’ assignments. They saw it as a way of whispering their thoughts and ideas to a student’s heart that might have been missed in the public discourse. Mary showed me her students’ papers, the margins of which were full of her comments. She gave her students an one-page writing assignment and she personally wrote comments on each of them. It took her two hours per batch, six hours a week. But it was “energy well spent” to her because it granted her the insight of what students were thinking.

Besides the written comment on students’ assignments, the teacher’s attitude is also important indicator of their feedback. Sharon insisted on giving students consistent
feedback “no matter what.” She described college students as similar to teenagers, who one day “want to be an astronaut, next day want to drop out of school.” She felt obliged to keep a consistent encouraging and cheering attitude towards her students even when they frustrated her. It was important for students to know not only her expectations for them to be assertive and responsible for their own learning, but also that they could always turn to her for support.

**Sense of humor.** Humor enlivens teacher-student relationship by making the teacher look more approachable. Linda was confident that her students would find it hard to offend her. She was very open to comments and questions. Students felt free to disagree with her about issues. Laura used humor a lot. She would even give students credits for bringing in jokes and comic videos related to the class materials. She herself exhibited a sense of humor. In the class I observed, she was lecturing with a PowerPoint presentation. At one point, she joked about the sophisticated images she made “Isn’t it a nice PowerPoint?” with her eyebrows gliding up and down in a naughty fashion. Class burst into laughter, and energy level increased. Betty exhibited a similar sense of humor. Her own inclination to laugh may have tickled her students. She also made fun of a little male image on her PowerPoint slide “Isn’t he a little cute guy?” while tapping her fingers on the image with an amusing smile.

Betty asserted that humor was essential for student learning. In an attempt to get more student participation, she promised her students to bring them “sugar” which was actually embodied by a song “sugar, sugar” from Archies. It provided a little bit of break for students and brought up their spirits. I heard her students mischievously begging for “sugar” in class, and she did bring in some real candy for them. Betty recalled another
situation where one student made a presentation in which the image of a werewolf was used. To bring some unexpected fresh air, she showed up with a mask and hands for a werewolf, which delightfully surprised and excited students. This funny scene was still remembered by students until today. A picture of Betty in a werewolf costume was posted on a student’s’ Facebook page. Women faculty’s sense of humor represent a particular aspect of their positionality that often helps relax the teacher-student relationship.

**Be flexible.** Sharon suggested that staying flexible and giving students lots of choices was motivating in learning. She would let her students pick a way to demonstrate their understanding of the course content by either taking an exam, or making a notebook or doing a presentation for the final. Students also negotiated with her about the time for taking an online quiz. She consented to open the quiz earlier for those who often got ahead on their reading assignments. Susan designed practice activities based on students’ learning styles so that they could choose the right practices that facilitated their learning. These efforts show women faculty’s attention to the contextual factors that affect student learning, which indicates their positional tendency of thinking.

**Technology May Facilitate Teacher-Student Connection**

In the section above, women faculty members made great use of interactive strategies to connect with their students. They also used technology, which was supported by rational instructional ideas, to promote their connection with students. Below I will elaborate on the experiences they shared with me.
**Email.** All faculty members used email to clarify students’ confusions about the course materials, assignments and exams, set up appointments with students, update students of professional opportunities such as conferences, publications etc and check on those who were absent for days. Mary winked at her comment, “My students don’t like that (being asked why they were absent from class) but I enjoy doing that.”

Email connected teacher with students not only by its functions per se, but also by the way women faculty operated email. Both Linda and Betty stressed responding to students’ emails promptly. For Linda, if she couldn’t answer a question or address an issue right away, she would email students to set up an appointment, which indicated that “You’ve got my attention.” Ignoring students’ emails in such a situation often conjured up negative reaction from students. Betty laughed about how her students expected her to reply their emails in 2 minutes, a mindset fueled by her “compulsion” to respond to emails instantly.

Email promoted teacher-student connection by erasing spatial and temporary limitations. For instance, Mary enjoyed the flexibility of answering emails at any time anywhere. She said “I can send it at 11 o’clock at night and students can find it at 2 o’clock in the morning and we’ve communicated.” Susan liked the flexibility of distancing herself from some difficult situations via email. When students asked questions such as “What can I do to pass this class?”, she was able to take the delay that was expected in an email for a thorough consideration of the question in order to formulate an appropriate solution to the problem. An immediate answer to the question, which was often imposed in a face-to-face situation may not be the most responsible attitude. To her, “It is easier in a lot of situations.”
Blackboard discussion board. The discussion board on Blackboard was the realm where faculty members felt that they could creep into students’ inner world. By looking at students’ discussions, faculty members were informed of students’ joy, concern, confusion, frustration and their relationship with each other. Donna used student discussion as a landmark that guided her to better explain an assignment or an exam. Linda leaned on student discussion of their reactions to her teaching to refine the course materials and adjust her teaching approaches. Besides assigned topics, Linda took great pleasure in reading “what’s happening” in her students’ “other situations,” anything in their life that made them three-dimensional human beings. Laura thought the discussion board was nice because it allowed her to read every single student’s mind instead of just the same four or five people who answered her questions in class all the time.

Interactive Video Conferencing (IVC). Interactive Video Conferencing is a tool used to deliver distance education. The newer version of IVC pleased faculty members a lot more than the older version. In the past, only the students could see the teacher but not vice versa, and students could not see both the teacher’s writing and her facial expression simultaneously. With the newer version, students and the teacher could see and hear each other. Susan often wrote on the screen and students could see it as well as her image up in the corner of the screen. Betty had thumbnail photos of the students so she could see who was more engaged and who was falling asleep. She also drew diagrams on the document camera and would call on a specific student to “guide her pencil,” telling her what to do to complete the diagrams. Sometimes, she would have students create diagrams or documents real-time and send them to her as an email attachment and she would open the file and share it with everyone in class. Nancy favored the newer version because it
imposed more accountability on students. Knowing the teacher could see them well, students could not easily “goof off.” Being so dependent on the visual cues from students, Nancy felt much more connected with students with the visual support enabled by the newer version of IVC.

**Breeze.** Breeze is another software that delivers distance education. Students can take courses through Breeze at their own homes and the teacher taught with her own computer from home or work. With two-way audio and video capability, Breeze effectively connected the teacher with students who were geographically dispersed. Linda recalled recognizing a student at a conference of 10,000 people. She thought it was “wonderful” to see somebody face-to-face whom you had only seen on the computer screen previously. Susan used Breeze to review course materials for her distance education students. She drew graphs and worked through problems on a whiteboard imbedded in Breeze, which allowed students to follow the steps she went through to solve a problem. Nancy depended on the visual cues enabled by Breeze to connect with students. Women faculty members who taught distance education often held office hours through online chat. A fraction of students would attend the online office hours by chatting on Breeze.

**PowerPoint.** Most women faculty members used PowerPoint to lecture in class. Susan pointed out that PowerPoint alleviated the need to turn her back to write on the board and so she was facing students all the time. That made her feel “so much more connected to the students.” With colorful images and funny video clips embedded into PowerPoint slides, students were able to remain engaged and the teacher elicited more interaction.
**I-clicker.** I-clicker promoted teacher-student connection by encouraging student attendance and student participation in class activities. Both Carol and Laura used I-clicker to take roll, an efficient way to encourage students to be on time, especially for big classes where students easily got by without coming to class.

I-clicker was also used as a testing mechanism. It gave Carol a chance to get instant feedback from students how much they knew about a new concept so she could estimate the appropriate time frame for teaching it. She hoped to neither move on too fast or waste time on what students were already familiar with. Laura gave pop quizzes with i-clicker. Her questions were either posted on her PowerPoint slides or delivered orally. Students used the I-clicker to respond to questions such as “Do you have an older member of your family in need of a caregiver?” or “If you are providing care for an older family member, what are you?” Besides being used for testing students’ knowledge about course materials, I-clicker was also used to elicit students’ opinions on certain issues, such as “Do you agree with this statement?” Using I-clicker for pop quizzes also broke up monotonous lectures, energizing the class to a higher level.

**Texting.** Only Sharon mentioned texting as a tool to connect with her students. She was willing to pay for it solely because it was how students wanted to stay connected, which was fast and fun. Questions students texted were often simple and related to the course, such as “Can I turn in this assignment about this particular book?” or “Is this article OK to read?” Sharon personally preferred face-to-face meetings, but it was more important for her to be on the same page with students by doing their dos and talking their talk.
**Smart Board.** Nancy used Smart Board to project websites and let students come up to manipulate things. For instance, she pulled up Google Earth so the students could see where Mongolia was and manipulate the map. Donna was appreciative of Smart Board as an interactive visual aid. Her students enjoyed manipulating the rhythms on Smart Board to create new music patterns, which she felt reinforced their learning retention. Linda and her students collaboratively drew diagrams and concept maps on Smart Board, which helped her students understand difficult concepts.

**Technology May Interfere with Teacher-Student Connection**

Technology, under some circumstances, can interfere with the connection between teacher and students. These circumstances include technical problems, the hiding feature of technology, nature of distance, unthoughtful use of technology, and so-called generation gap.

**Technical problems.** Technical problems prevailed in distance education setting. Women faculty members teaching with older version of Interactive Video Conference system reported that only students could see them but not vice versa. Besides, students could only see one instance of the teacher. If the teacher wanted to demonstrate a graph or an image, she would have to turn the camera off her and onto it. Students got off task easily without the visual contact with the teacher. They might eat, laugh or talk on cell phone. The newer version of IVC relieved the problem to some extent by allowing two-way audio and video so both the teacher and students could see and hear each other. The teacher had a view of all the students. When a student answered question, the camera would zoom in on him/her. However, the images of students were not clear. Donna and Laura felt that this teaching context was “very depersonalized” because they could not
see each of students’ faces clearly. As a person dependent on physical cues, Nancy was longing for a high visual quality of student image, because she could not tell if they were “grimacing or smiling” in her class.

Another technical problem with IVC was time delay, which presented a huge problem when a teacher tried to coordinate multiple sites. Donna had students at 6 sites. She was frustrated with her inability to get all students to sing and clap hands simultaneously. Most of her students were future elementary school music teachers and they needed to experience singing, playing music and moving around, activities they were going to conduct with young children. To duplicate this experience from distance with time delay was very discouraging.

Similar technical problem was also present with Breeze, another form of software used to deliver distance education. Nancy was exhausted juggling among students’ complaints such as “I can’t hear you” or “I can’t see you.” She gave credit to Breeze for bringing together people all over the state, but the technical glitches frequently “got between you and your students” by preventing her from “having a fluid relationship with students”. Communication was constantly disrupted and the teacher felt hassled. It reminded Nancy of the difficulty of having an in-depth conversation with people while being frequently distracted by a small child. As conversation was constantly interrupted by having to attend to the child, you forgot the track of the conversation and had to frequently ask “Where were we?” When problems like this occurred too often, that was when she gave up. Nancy was frustrated when her teaching preference for fluidity was violated by technical problems. It flew in the face of her effort to show her students “see, you can use technology in your classroom and it’s wonderful.” Her sarcastic attitude
towards this issue was reflected by a sign in her office that read “live by technology, die by technology.”

Besides the distance education setting, technical problems arose in face-to-face classroom. The most widely perceivable challenge in using technology for women faculty was technical failure. A few women faculty recalled an accident of Blackboard outage years ago. Kimberly was in the process of grading tests, opening quizzes and online discussions for students when it happened. Data was lost and she was unable to recover the information on Blackboard. Carol was taken aback by this Blackboard crash too and she started making back-ups since then. Besides the Blackboard crash, other types of technology failure also disrupted women faculty’s teaching. Linda was “paranoid” when the projection system failed or the bulb went out. She learned to test technologies before class to avoid the hassle.

**Nature of distance.** Whether it was due to the nature of distance or technology per se that interrupted teacher-student’s connection had been an issue of interest. Quite a few women faculty members, though not explicitly, seemed to indicate that the fact that the teacher and the students were not in the same space interfered with their effort to develop a face-to-face kind of connection.

Women faculty members acknowledged the importance of providing students with access to information and knowledge through tools such as internet, IVC and Breeze. On the other hand, an inevitable fact is that the teacher-student connection under these conditions differed from that under traditional face-to-face learning context. In the case of online education, everything from lectures to assignments and exams were posted online and students and teachers had very limited interaction such as email or phone call.
There was not nearly as much personal interaction as in the traditional classroom. Susan and Laura made an extra effort to post online their own pictures, brief introduction of their families, and their recorded lectures so that students saw how they looked and heard their voices. In the case of IVC and Breeze based education, students and teachers could see and hear each other. But, Nancy was not content with the virtual classroom dynamic, because the “energy created in a shared space” was lost. The teacher and students could not have the same kind of interaction as in a shared space because of loss of many non-verbal cues from students. While recognizing the advantages of IVC and Breeze, Nancy hoped “If we could have meeting out there with students in Brook or Ruby, it would be even better.” Due to the lack of social presence caused by geographical distance, Linda sighed, “You can’t always feel the personality of a person when you just look at text on the screen.” Ruth resonated that she can’t have as much relationship with students just because of the distance.

Students taking online or distance courses typically worked all day and attended class in the evening. Tired from the day’s activities, they often withdrew behind the computer screen and remained “anonymous.” Sometimes, when there was only one student at a site, it was much harder for the student to stay engaged without peer pressure. Betty, Linda and Laura took roll, called on students by names, asked questions, put on jokes or cartoons so as to ignite students’ energy. But the impersonal nature of the medium remained.

**Technology hides.** Many women faculty members noted that students often sent emails to avoid the necessary face-to-face communication with them. When students were going to miss class, miss a quiz, or couldn’t submit an assignment on time, they
chose to hide behind text by sending email. “Am I scary?” wondered Carol. She took students’ decision to email as an indication that “she [Carol] doesn’t know me [students]. I don’t want to talk to her.” Donna would much rather have the opportunity to talk to students about the choices they made in person. Both Ruth and Sharon commented that it was very hard to read what was going on between lines of text due to lack of students’ facial expressions and body languages. Misunderstanding occurred on both sides. Sometimes students thought Ruth was being critical when she was really not. She had to back off to say “No, no, no, this is not what I meant.” Ruth admitted “It was hard without the emotional connection, just very black and white.”

Students also hid behind Blackboard posts of class notes, PPT lectures and chapter summaries to escape class. Kimberly’s students told her that they really didn’t feel the need to come to class because they felt they could get everything online. Carol, facing a similar problem, continued to post all her materials online because those escaping class were “outweighed by students who miss class and don’t have another way to get the notes from today’s class.”

Students hid behind online discussion rather than engaging in real dialogue that involved taking responsibility for their words and feelings. Kimberly noticed that her students could easily follow someone’s opinion without devoting serious thoughts into the topic. Students also hid behind books in a similar way. It was easier to build on an author’s word by saying “the author said” instead of embarking on a personal journey of self-reflection.

Kimberly also brought up an interesting issue that put a rift between her students and herself. She personally found it “annoying” that students demonstrated an increasing
sense of entitlement in their complaints. She received many more emails from students than before, excusing themselves for missing an online quiz or discussion. They complained about technical problems instead of admitting their own inclination for procrastinating. Kimberly felt a bit helpless that it could have been a lot easier for her to deal with when a student missed a quiz in class, rather than when a missed quiz was due to technology crash. She was passionate about using technology to bridge the gap between students and her and strengthen their relationship, but “it tends to work in the negative aspect of connection.” In these cases, students hide behind technology to escape their duty by blaming the technology.

Students also hid behind cell phones, iPod and laptops. When they were distracted by texting other people, surfing on internet or listening to iPod in class, they were not making connections with their teacher. Mary and Sharon were pretty bothered by this misuse of technology that was off task and an essentially form of escape.

**Unthoughtful way of using technology.** Technology serves as a vehicle to deliver information. It takes creative and careful thought for the teacher to build connection with students via technology. In a smart classroom, if the teacher is tied to the front desk where all the technologies are installed, it may create the impression that the teacher is unapproachable. Ruth discovered a hand-held remote control device, which freed her from that isolating corner, so that she could wander around to elicit more personal interactions with students. PowerPoint is a tool to keep the teacher’s lecturing focused but it could be overused. When it was used exclusively for everything monotonously, students fell asleep. Mary sighed that very few people “took the time to really design the slide show effectively for maximal learning.” She herself demonstrated
effective use of PowerPoint by engaging students mostly with her interactive speech with periodical clicking on the slides. Student learning was enhanced but not dominated by the visual support offered by PowerPoint slides. Technology is a “support” but not the “main show.” Both Laura and Linda testified of the challenge of distance and online education to build teacher-student connection. They suggested that teachers dedicate careful thinking to come up with strategies to conceptually shorten the physical distance between the teacher and students.

*Generation gap.* Mary was aware that the current generation of students all texted and that texting would get their immediate attention. If texting was available on a free basis, Mary would not mind learning to use it. But she was unwilling to pay for a texting plan just for the purpose of reaching her students. She admitted that texting was “the real disconnect between generations of teachers and students.” She explained, “You know we are at least five years older and some are forty years older than the students.” Figure 4 delineates a teacher’s puzzle over her techy student’s explanation for missing homework in a humorous way.

**Student-Student Connection**

This section presents women faculty members’ understanding of their students’ relationships with each other and how they strive to create and promote student-student connection. Technology can both facilitate and interfere with this connection.
Women Faculty’s Understanding of Student-Student Connection

Women faculty members’ perceptions of student-student relationship vary due to their different positionality based on the kinds of classes they teach, their different class size and their student population. Some, like Nancy whose classes were normally small, perceived that their students had good relationships, spending a lot of time together and caring about what their peers were thinking. Others observed that their students were often indifferent to their classmates. Susan’s online students, who may never see and talk to each other, were perceived to be more connected than her broadcast students who often had the auditory and visual link between each other. Susan recalled that sometimes students walked into her classroom and never spoke a single word with anyone all semester. But these same students might be comfortable conversing in an online situation. Carol also wondered how much her students knew the person they sat next to. She found “squeezing more people in a room doesn’t make more friends.” It seems that feeling anonymous facilitates connection.
Student – student relationships extend in group work. Ruth noticed that her students who used to sit by their friends started to sit with their team members after having worked on group projects. In a group situation, students could become reciprocal authorities to each other. They would consult on problems, exchange thoughts, produce solutions, and share tasks. This collective and democratic process became a place for everyone to assume the position of authority by virtue of their unique strength and expertise. In Ruth’s case, students’ positionalities manifested in their diverse perspectives, which stretches and broadens their horizon.

The opposite was also observed. Carol and Kimberly, who taught big auditorium classes, noted that their students were more individual than group oriented. Carol’s students hated sharing a common grade on a group assignment, being held accountable for each other’s performance or having to come into an agreement with others. Kimberly found that some of her students were reluctant to share responsibilities for group work.

Student-student relationships are nourished in a safe environment. Students are concerned about how their peers see each other. They want to be respected and liked. They may hesitate to ask questions in front of all their peers to avoid creating the impression, “I am stupid… my hand is up in the air.” Their reluctance can be aggravated when several people tend to dominate the class discourse or answer most questions. Quite a few women faculty noticed this pattern and developed strategies to change it.

Student-student relationships take different forms. It shifts among closeness, distance, sharing, reservedness, appreciation, critique, cooperation, and competition. This relationship is in constant motion of changing, alternating, and restyling and this motion is indefinite, given each student’s constantly shifting positionalities under various
contexts. Women faculty members stay alert to establishing and maintaining healthy student – student relationship. The next section shows how women faculty help promote student-student connection.

**Women Faculty’s Strategies to Promote Student-Student Connection**

Noting the variations in student-student relationships, women faculty developed strategies to connect students with their peers by creating opportunities to make quiet or shy students’ voices heard, by sharing insights in everyone’s contribution to the learning process, and by instilling in students an open-minded and appreciative attitude to diversity. To be more specific, they used group projects and student-centered group discussions as the two major strategies to promote student-student connection. Students’ self-introduction and peer evaluation are also popular strategies.

**Group project.** Group projects can be used to transform class into supportive learning teams. The formation of groups keeps students bounded and mutually accountable for the accomplishment of a common goal. Group members share tasks and mutually depend on each other’s skills in their collaboration and cooperation with others. Group projects turn into a place for students to get better acquainted with their peers as they spend a lot of time together, working, discussing, planning, cooperating, and debating etc. Gradually, group members will develop a sense of belongingness to the team, a sense of trust in team members, and a sense of appreciation for diverse perspectives and expertise.

Many women faculty carefully designed group work for their students. For instance, both Carol and Betty prepared guidelines for their students that explained the
goals of the project, outlined a rough schedule for students’ reference, offered a variety of optional topics that students could choose from, and suggested approaches for students to split the work. Carol’s students appreciated the class time she spared for them to work face-to-face, which facilitated the progress each team member made outside class. In Betty’s class, students undertook a semester-long group project for a real world client. Her students were at the liberty of selecting the content of the project as long as they applied techniques and tools learned in the class. Students were expected to attend a lecture and a lab session when they worked with team members on their projects.

I observed both Carol and Betty’s classes. I watched students working vigorously within their teams. They asked and answered questions with each other, brought up personal examples, negotiated different understandings of the task, reported individual progress, and made decisions about next steps. I heard debate, explanation, jokes and laughter. No one was left out. Group cohesiveness was up in the air that strengthened students’ friendship and understanding for each other.

Group work does not always proceed without challenges. Betty had run into situations where team members were not equally competent in terms of technical skills. All the students were working hard, but some could not perform to the standard of others. Betty invited the whole team to her office and altogether they negotiated a way to resolve the conflict. To Betty, learning the course related concepts and skills was important. It was of no less significance for her to educate students a fine attitude for working with teams, which included patience, acceptance, sympathy, tolerance, and open-mindedness to embrace differences, different positionalities.
**Student-centered group discussion.** Another strategy for promoting student-student interaction in class is group discussion. Some discussions were conducted based on designated readings, or under the teacher’s guiding prompts and some were done spontaneously in class. Similar to group project, women faculty members explained to the students the purpose of group discussion, appropriate discussion behavior and criteria for evaluation. It was widely expected by women faculty that students would be able to critically think about the topic or the theme under discussion and relate it to their lives or wider issues in the society or the world so as to advance the discussion to a higher level.

Donna and Mary would circulate around the classroom and eavesdrop by each group to make sure that everybody in the group had said something. Sometimes students were prone to forming groups with people they knew or those they sat close by. Some women faculty members tried to break the pattern by encouraging students to move around to form new groups with someone they did not know very well or hadn’t talked to. Mary was delighted to hear a student asking “What’s your name?”, the start to build connection. Nancy noticed that “The dynamic of a particular group may be silly, not really working hard… another group really on task and thoughtful,” so she tried to mix up students to enrich their team building experiences as well as enhancing their exposure to diverse viewpoints. Kimberly taught a class on anthropology of two hundred people. It was essential for her students to share personal stories, ways of living and being, and their encounters with cultural shock in small groups. She recognized that it was unrealistic to have everybody speak in class within the class time.

Student discussion is sometimes fraught with tension. In Kimberly’s class, I witnessed a heated discussion on sexual violence. A male student, pounding his fist on
the table, declared with all assurance: “Never in my 21 years, [has] an American raped [an] Asian. I heard [of an] Asian [who] raped [an] American. [An] Asian raped American, but not the opposite.” A female student snapped at him, “Maybe it’s just invisible to you.” Another female student jumped in, “I’m the privileged group. I’m not marginalized, not opposed. There are things I don’t know.” Sitting at the back corner of the classroom, I quietly pondered what endowed that male student with the self-affirming confidence and assurance based on his 21-year-life to make his claim and what then enabled those two female students to perceive what appeared to be potentially invisible to that male student. This observation shed light on how students position themselves differently within shifting networks of relationships, which grants them different voices.

**Student self-introduction.** Besides group projects and class discussions, many women faculty members would ask students to introduce themselves at the beginning of each semester. Students would introduce their names, major, where they came from and reason for coming to this class etc. Sometimes, students were asked to introduce themselves to the person next to them in preparation for introducing the other person to the class. In some cases, students would be asked to remember some things about their peers and report to the class.

**Peer evaluation.** Peer evaluation is used to motivate students to monitor their progress as well as giving the teacher an idea of student performance that guides their future instructional decisions. Peer evaluation is often used in teamwork situations. Students are not only responsible for their own learning and performance, but also are held mutually responsible for the successful completion of the group task. To conduct effective peer evaluation, students will closely observe the quality of work accomplished
by their peers, how supportive their peers are for the whole team, interaction and communication pattern among team members, their peers’ sense of responsibility and level of involvement in the teamwork. By critically reflecting and judging on their peers’ work attitude and performance, students reach a higher level of familiarity and understanding with each other. Besides peer evaluation, some women faculty members also adopt the idea of peer review. For instance, Ruth asked her students to go to more than one student for a peer review of their written work. By talking to different people, students obtained different insights into their work. Additionally, reading their peers’ work could alert students to the similar issues in their own work.

**Technology May Facilitate Student-Student Connection**

Women faculty members who taught distance and online courses agreed that technologies such as Breeze and Interactive Video Conferencing system were “everything”, without which, there would be no connection. If these technologies had failed, the classes would have been essentially disabled. Online discussion board and I-clicker are also significant vehicles of interaction for students.

**Breeze and Interactive Video Conferencing System.** Breeze allows for various types of synchronous activities among students. Students can view and hear each other, watch PowerPoint presentations, share desktops, have instant chat, and share content slides and files. Linda, besides teaching through Breeze to reach students all over Utah, created opportunities to bridge students with each other by asking them to do group presentation through Breeze. Students shared their presentation slides and documents and text chatted questions.
The Interactive Video Conferencing system works in similar ways to Breeze except that students need to come to a designated site instead of their homes to take the class. Students can view their peers at other sites through a flat panel television screen. They speak into a microphone in order to communicate. Betty requested her students in five locations to do a group project, which really stretched them to figure out how to reach and collaborate with each other. Being aware of the negative effect imposed by distance, Betty demanded student attendance and participation. She made a conscious effort to engage students with each other by calling on them by name, asking them to share something from work or family, and then to relate it to the course content. When students were sharing personal stories, other students got a chance to establish a more three-dimensional view of their classmates.

**Online discussion board.** The discussion board on Blackboard Vista provides a space for students to discuss academic related topics and personal issues. Students could join and read forums at any time, catching up with messages already posted, commenting on a topic or asking and replying questions. Many women faculty members witnessed a growing sense of cohesion in the online discussion community when students’ discussion crept into personal arena. With a longer time frame, students were able to produce more thoughtful answers to other people’s questions. Faculty members often stayed invisible unless they saw a need to redirect the topic or clarify confusions. Students independently organized and nurtured their discussion forums, feeling empowered and motivated. Kimberly noted that students could engage with one another in ways that they might not in a face-to-face setting, especially in large-enrollment classes. For instance, quiet or shy students could actively participate in discussion without feeling anxious. With diminished
signs of gender and race, students could feel more freely to voice opinions and express themselves.

**I-clicker.** I-clicker encouraged student attendance and class participation. Carol and Laura often gave pop quiz to assess students’ knowledge and generate student discussion. Laura posed questions based on the reading assignment to make sure students understood the material. Both Carol and Laura would ask for students opinions such as “How many of you have known someone with Alzheimer’s disease?” or “Why do we conserve energy?” By having students click from A, B,C,D options, they “forced” students to be committed to share more of their experiences. I-clicker has the function of displaying students’ voting results in a bar graph. Students got a sense of how others in class think differently. The teacher normally kept the voting result anonymous, which facilitated less talkative students’ participation in learning. These students appreciated the chance of “voicing” without having to raise their hands in public. In a way, the I-clicker created a safe learning environment for students where they did not freeze or panic because they could answer questions anonymously (Beckert, Fauth, & Olsen, 2009).

**Email.** Students used email attachment function to do collaborative projects, and exchange ideas, opinions and feelings. Some students established their own email group like Yahoo!Group, to send instant message and share photos, group calendars and web links. The use of Google Docs simplified the process of document transfer. It served as a “cyberspace”, where everyone could go to make revisions and corrections on the document and where they could find the most updated version available to everyone at any time. Listserv was also used for students to communicate with their fellows. It
contained a list of people’s email addresses and could reach a large audience in a timely manner.

**Technology May Interfere with Student-Student Connection**

Technology, at times, can interfere with the establishment of connection among students. Technical problems, nature of distance and the hiding feature of technology can negatively affect student-student interaction and communication.

**Technical problems.** In distance education settings, technical problems happen with Breeze and IVC, which arise from their limitations in supporting smooth audio and video connections among students. One example comes from Donna’s class where the time delay of the Interactive Video Conferencing system was very discouraging to her. When her students who needed to but could not experience clapping hands or singing together with students at other sites due to time delay, the options for their interaction with each other was significantly reduced and their learning experiences were compromised. Another example arose when students could not see and hear each other clearly from multiple sites. In such cases, students’ experiences in learning with and from each other were significantly reduced and their interest level in learning dwindled.

**Nature of distance.** Instead of putting all the blame on technology, some women faculty members distinguished between technical problems and the nature of distance. Many students taking distance or online courses were not traditional college students. They held full time jobs and had families. They took the classes one or two nights a week. By the end of the day, they were pretty wiped out, often fading behind the computer screen from sheer fatigue. Sometimes, there was only one person at one site, which made it very difficult for the student to stay engaged and somehow to stay collaborative with
others at other sites. Nancy, Laura and Susan appraised the ability of technology to bring together students from all over the country who would not have had the chance to access formal education. However, these students would not have the face-to-face kind of connection and were not able to do everything that traditional students did. Nancy recalled how excited her students were when they eventually met with their online or broadcast classmates. “They love that opportunity [to meet],” she said, “that’s the nature for human beings to want to be in the same space.”

**Technology hides.** In the view of some faculty, students hid behind online discussion board. Betty attributed key ideas and in-depth thoughts to the first contributor of threaded discussions. The second or third students easily crept into the discussion by saying “that sounds good” or “I agree” without engaging in substantive thinking. Kimberly perceived that technology really “got in the way” because students escaped real dialogues with one another that required them to take responsibilities for their words and attitude by hiding behind others’ thoughts, which took little if any effort to respond with “yes, I am with you.”

Kimberly was also surprised to note that her students revealed a “cruel” aspect of themselves by hiding behind online discussion. Feeling anonymous or impersonal, her students sometimes were more likely to say unkind things than they would face to face. She gave a few examples. When they did a topic on plural marriage in Africa, one student posted a comment “Well, I totally disagree with the author and I just think the people that he discusses must be really ignorant and stupid to have multiple husbands.” Another example was from a quoted post about the world resources project, a team project that gave students extra credit for collaboratively working on redistributing the world’s
wealth more equitably. One student commented, ”I have no obligation to help anyone. If they need extra credit that badly, perhaps they should study more often. I am not a fan of welfare system (unemployment makes more sense). If they want something, they should give something for it.” As cool as they were, students refused to take responsibility for owning what they said by hiding behind online discussion board. That’s one reason Kimberly preferred to address issues with students face to face because she wanted them to look at her in the eyes, being able to own their opinions, attitudes, and feelings.

Women faculty also perceived that their students hid behind cell phones. Their first inclination for communication seemed to call or text their friends just around the corner rather than walking to the person and talking to him or her. Carol was annoyed by seeing her students texting their classmates in class about “boyfriend or whatever it is on their minds.” To her, they were not making connection with “real people” but with “robot people” who “answer back.” Carol herself hated her own cell phone, because “it bosses me around” she said. A typical example in her view was people walking across campus with their faces stuck to their cell phones too busy to attend to the people with them. Carol lamented, “I can’t imagine being that rude to my colleagues…these are your friends and you are talking to someone else on the cell phone. I watch more and more avoidance of real contact. You substitute electronic friends instead of having real friends.” Students also hid behind technology by listening to iPods or surfing the Internet on their laptops, which may have interfered with their interactions with their peers.
Student Life-Learning Connection

Women Faculty’s Understanding of Student Life-Learning Connection

All women faculty members embraced the notion that there was a huge connection between the students’ lives and their learning. Students’ life experiences are the foundation on which they build their learning. Life experience drove what students understood from the course content and at the same time, the new knowledge students had acquired would direct their new life experiences. Sharon said that when life and learning were linked, a chemical called Dopamine would be released in one’s brain to make one feel good and cool, like when one was driving fast or climbing a mountain. In a learning situation, when this chemical is released, students are motivated to learn more. Nancy suggested if students could not make a connection between their learning and their lives, they might learn something momentarily but it would not become part of who they were. She thought there had to be the glue for her students to become a learned person.

Students’ life experiences enable them to make better sense of their learning. Betty often drew on examples from students’ work and home situations because that was what made students’ learning real. She would love to help students realize that what they were learning was going to make a difference in their life rather than just “fluff.” Laura felt lucky with her major, family life and human development, which made it easy for her to teach students how to apply the course materials to their life. When students went to visit a nursing home on a field trip, and saw elder people acting in certain ways, they could use their book knowledge to develop a sense of what was going on. Linda herself underwent this transforming experience as a learner. In her early years of career, she used
to work with children with disabilities to help them learn better with assistive technology.

It was only after she had her own son that everything she has been learning and teaching “all came together.” She was thrilled that “the experience of living it made it very different” and everything she had been teaching in theory “came alive” in her son. She was hungry for information because it was connected to what she wanted to do in her life.

To Linda, her life had shaped her learning, her goals, her responses to teaching style, her strengths and weaknesses as a learner.

A life-learning connection can be embodied by a spider web with a lot of strings tied together, Carol suggested. She said,

I don’t think they learn what I know. I think students construct their own connections and that means hopefully in class I touch something of background material they know, and connect it to another thing. Now we have this first piece of string, the first piece of spider web that connects something I already know to something new. Now, there is another new thing I could connect to, another thing I either knew in the past or [that] is new to me now. This tangle of webs is very different for different students, which means that nobody learns the same thing. They learn pieces and connect different things and they all walk out with something different every day.

Mary echoed with a metaphor of the coat rack. To her,

Our minds are like giant coat racks and the coat rack is built out of everything we already know and all the perspectives and beliefs we already hold. When we encounter new information, we need to find a hook upon which to hang it so it needs to fit in somehow with the existing giant coat rack or if there is no place to fit it, we have to tweak the existing coat rack to accommodate the new information.

Sharon suggested that teachers should take a flexible approach for applying learning into life. As “there is no definitive word and best approach to teaching,” she encouraged her students, in their future teaching career, to seek the most appropriate practices that worked for them and worked for their students. She reminded her students that there was no best practice, and that different teachers stepping in the same classroom
could handle the class completely differently. Her students’ teaching approach had to be
derived from their own understanding of teaching and learning, the life history of each of
their future students, and their specific teaching situations.

Students’ life experiences sometimes cast shadow over their learning. For instance, students may come to class with different pre-conceived notions about their learning experiences. People who have had poor experiences with math in their childhood or as teenagers may have a “fear” attitude about math, assuming that “I can’t do it” while those who have been successful in math just stride into the classroom with confidence. Bad marriages, sick children or stressful work situations could have interfered with students’ learning experiences by hindering them from making a full time and energy commitment to their study. One of Linda’s students had experienced an abusive relationship in life and therefore was very sensitive to a teacher’s attitude. Laura was teaching about theories about growing old. Some of her students came to class with a negative image of aging and were scared of the aging process. She tried to nudge them out of this pre-conceived image of aging by educating them on what was realistic as well as some positive experiences about growing old.

The scenarios described above illustrated women faculty’s positional awareness embedded in their attempt to help students make connection between life and learning. This connection is desirable, but in some cases, scrutiny is needed. For instance, when students’ prior life experiences negatively influence their learning attitude and behavior, this connection may need to be teased out, as suggested from a positional view that emphasizes refining our action in correspondence to the shifting contexts. In this case, life-learning connection is achieved by separating life from learning.
Women Faculty’s Strategies to Promote Student Life-Learning Connection

Women faculty members used different strategies to activate students’ prior life experiences as a foundation for their learning and encourage them to apply the new knowledge into their life. They asked students thought-provoking questions, shared personal stories with students, designed real life projects for students to conduct, cultivated in students real world attitudes and skills, and respected their diverse learning styles.

**Questioning.** A most prevalent strategy is questioning students to get them to reflect on their life experiences. One aim of such questioning is to help students realize their purpose of learning. Donna and Nancy asked their students to identify their own learning goals with questions like “Why did you come to this class?”, “What are you going to do after this class?”, or “What are you going to do with this knowledge?” They longed to assist students making their own learning goals and matching their goals with the course content so that they may develop a better sense of purpose as well as increased motivation in the process of learning.,

The teaching process offers rich opportunities for teachers to stimulate students’ reflection on their personal life. Betty, while teaching a project management class, often asked students to elaborate on some course concepts, like data conversion, by sharing their experiences in a work situation. With sensitive topics, Betty was careful to ask “do you know anyone who has experience with the situation?” so this “anyone” could be themselves, their roommates, their life partners without revealing the true identity. Nancy was teaching a course that prepared pre-service elementary and middle school teachers. She often prompted her students to examine the current curriculum content in light of the
bigger society issues. Sharon, teaching an education class, asked students for real life examples any time a new principle was introduced. For instance, when the concept “reinforcement” was introduced, she asked “Ok, guys, how were you reinforced when you were in 10th grade when you had to learn calculus or geometry?” She also asked the question “Has it happened to you before?” to encourage students to relate their life experiences with the teaching principles like preserving the students’ dignity, maintaining consistency, keeping your comments brief, and avoiding arguments or confrontations.

Laura in teaching family and human development often touched topics closely related to students’ lives. When teaching about social security and medicare, she would request students to make choices about different plans that their grandparents might be eligible for. For the topic of retirement, her students would talk about their parents’ financial planning for retirement and they would discuss the pros and cons of it.

Students framed their responses to the teacher’s questioning from the reflection of their shifting positions from an elementary school kid, to a teenager, to a grandchild, or to a sibling etc. Their reflection on life from a diversity of positions both as individuals and members of group learning community brought to light how aspects of positionality interact with one’s construction of knowledge.

**Sharing personal perspectives and stories.** Ruth was teaching about resume writing in her business class. She brought in real life samples to show students good and mediocre examples of resumes. Linda encouraged her students to share stories about a disorder disease under discussion and each student’s story really deepened the learning for the rest of the class and provoked their compassion. She insisted that any concept or terminology, like a type of disease, should not be just a term out of the book. It became
alive impacting people’s life when students started to share their experiences about it. Mary allocated 10 minutes of every class period for students to share “cool stories,” which allowed students to make personal connections to the class topic, such as heritage stories on Christmas.

Sharon not only encouraged students to share their teaching experiences from practicum teaching, but also was open about her own successful and unsuccessful experiences in teaching. For instance, she told her students how she had offended, unintentionally, a parent, who heatedly told her “Don’t ever say that in my face.” She also brought up real-life cases and let students analyze them from their unique perspectives. Throughout these mutual exchange process, Sharon wanted to be seen as a real human being, instead of omniscience by telling her mistakes when in violation of some of the teaching principles mentioned in class. Kimberly was teaching an anthropology class, a subject spurring interesting discussions on different ways of living, cultural shock, ethnic beliefs and racial tolerance etc. Like Sharon, she was willing to share her own stories such as being a victim of sorcery, which she hoped made herself “vulnerable and real” in students’ eyes. Ruth told stories about her siblings. One story was about her sister’s job hunting to illustrate the point that “You never let any chance slip from your fingers.” Another story about her brother interviewing a women applicant highlighted the importance of non-verbal behaviors in a job interview.

These instances indicate women faculty’s effort to personalize their authority by sharing their enthusiasm for the subject, mistakes occurred in their career, and personal reaction toward issues etc. Their authority became positional because in the scenarios
described above it has shifted to personal experiences and knowledge, which increased students’ share of it by acknowledging students’ different positionalitie.

**Real life project.** Women faculty members often requested students form groups and work on collaborative projects to put course concepts into practice. Betty’s students were required to work with a real-world client to develop a system that met their clients’ needs. Students were expected to use system planning, analysis, design and implementation skills acquired from the course into their assigned project. Mary, in order to inform her students of a new outlook on migration, immigration and the role of languages in one’s life, asked her students to go out and do a case study with someone from another culture who spoke a language other than English. Mary also designed another project that required students to research a modern multilingual society concerning its history, ethnic groups and the language situation such as indigenous languages and peoples, endangered languages, high status versus low–status languages, languages taught in schools and new immigrant languages. The interview experiences was intended to enrich her students’ lens on the inexplicable relationship between languages and identity. Laura requested her students to interview family members or friends on grandparenting or financial planning for retirement. Kimberly designed a project that required students to simulate either a rich or poor population and work with and solve the problem of unevenly distributed world resources. Students gained insights into the difficulty people had of “pulling themselves up by their bootstraps.”

*Cultivate real world attitudes and skills.* Women faculty members embedded a positional consciousness in helping students make connections between their life and learning. One example relates to their attitude toward technology adoption by their students. Quite a
few women faculty viewed one aspect of education as keeping students updated on all the
technologies available in their fields, so that they could benefit from using these
technologies for their future careers and lives. For instance, Donna insisted that her
students, future music teachers, should know some software for teaching music. Susan
withdrew from her role of just teaching her content area and was passionate about
educating her students about the available technologies that could improve their life.
Susan enjoyed the idea that “I’m helping them (students) become better adapted to life as
an educated person and not just learning statistics.”

In a different context, Carol was doing the opposite. Although she was teaching
science with modern technologies, she cautioned her students, future elementary science
teachers, about the possible shortage of technologies like computers in their future
schools. She kept students aware of the necessity to be able to explain heat, light and
sound and all kinds of astronomy without technology and still be comprehensible to kids.

Another way of connecting students’ life with their learning relates to revising
students’ attitude. Laura paid attention to students’ negative attitudes about aging. She
made a conscious effort to educate her students on what was realistic about growing old.
She made it transparent both positive and negative sides of aging and informed students
of the treatment of aging diseases. Her goal was to get students out of the imagined stress
and prepare them with a realistic outlook on aging, which would assist them better deal
with it in their lives.

Helping students develop skills that will benefit their future lives is also a strategy
of building student life-learning connection. Carol indicated that more often than not, her
students did not know how to take tests. From her perspectives, they had no idea how to
read an essay question. To Carol, the ability to learn the material and self-assess their learning was vital for students’ ongoing learning in both formal and informal settings throughout life. So she designed assignments to help students practice the test skill where students were requested to write test questions themselves. Students’ learning habits and behaviors at school can influence their lifelong learning in a variety of contexts. The ability to think critically could benefit them in their future occupations and careers.

**Respect diverse learning styles.** Students are not clay subject to teachers’ willful shaping. They bring in rich memories and personal attributes. Their learning style is one of such attributes. The teacher remains sensitive to students’ multiple learning styles, whether it was visual, vocal, auditory, kinesthetic or tactile. Susan pointed out that after she realized that she initially taught the way she learned that may not be the way all her students learned, she made an effort to explain the course materials “in one way, then another way, and another way,” so the students could find one way that worked for them. Another effort she made was to organize her practice activities in different formats, such as visual activities or auditory activities. She encouraged her students to find the kind of activities they were most comfortable with. Many women faculty acknowledged that technology enhanced their ability to present information in different modes so as to meet students’ various learning needs.

**Technology May Facilitates Student Life-Learning Connection**

Many faculty members took advantage of technology to link student learning with their life experiences. Interesting and meaningful videos on websites, Blackboard
discussion forum, I-clicker, movies and the smart classroom all facilitated the establishment of this connection both inside and outside the classroom.

Many women faculty members displayed websites to share with students information relevant to the course content. Both Nancy and Mary projected colorful maps from websites so that students to illustrate the places under discussion. YouTube was many women faculty’s favorite play ground to haunt. Most of them used YouTube to share videos that highlighted the course materials. When Sharon was teaching classroom management, she pulled out two videos that vividly symbolized the challenges in managing elementary school kids. One video is called “herding cats,” in which ten thousand of cats were herded by cowboys, a tough task that not everybody could do. This metaphoric expression powerfully illustrated the difficulty of managing groups of elementary kids. Another video clip she used was from a comedy movie Kindergarten Cop, in which John, played by Arnold Schwarzenegger, stumbled along to keep a group of kindergarten kids disciplined, in vain. In a humorous way, this clip portrayed the toughness of managing unpredictable school kids. These two videos clips paved the way for Sharon to introduce classroom management strategies. Linda relied on YouTube videos to show her students what a certain disability was like. For instance, she played a YouTube video of a person with multiple sclerosis talking about the challenge of this disorder. Her students appreciated watching these videos, which made their learning more real.

Another way of using Internet was to ask students to check out websites that would help supplement and expand student learning. When Laura taught about intelligence, she had her students online to find different online tests on intelligence, and
under her guidance students compared and contrasted among different intelligence tests. Sharon encouraged students to go to a website called “misunderstood” that looked at the needs of students with a learning disability. Students participated in activities on this website, which enabled them to experience having a learning disability. Nancy not only used websites for her teaching, but also requested students contribute to a teacher’s website. She invited students to create lesson plans on different topics being taught in class, such as children’s literature, and post her students’ work online. This website became a public resource for all educators all over the globe. Donna encouraged her students to check websites to get themselves updated on what software was available for teaching music.

Online discussion board exposed students to their peers’ multiple perspectives that often provoked self-reflection on their own lives. Comments from students such as “Yes, when I read this, I was thinking about my cousin who had just gone through this experience,” or “Oh, I can see your point from my life” were not uncommon. Some women faculty members would post a guiding prompt that instigated student discussions by relating their life to the course content.

Women faculty members also emailed students to keep them updated on current events on campus or inside and outside the community, conferences and journal publication information, or simply to share personal reactions toward an event with students. Linda’s students in one class were very supportive of each other and when one student was sick, the whole class got the information from a group posting and sent this student a little “how are you doing” card.
I-clicker was helpful to generate pop quiz questions that prompted student discussion. The pop quiz questions were often used to elicit students’ responses or opinions about a concept or a phenomenon. Students were encouraged to root their answers in their own lives and share them with each other. I heard burgeoning examples from students’ homes, elementary school years, grandparents, cousins, or an overseas trip.

Movies were also used to bridge students’ learning and life. In Susan’s class, a movie clip from Disney’s animated Robin Hood brought students home to the concept of “confidence intervals.” A clip from a TV show “Gillmore Girls” shed light on the topic of sample size. Ruth showed case studies on real world job interviews. Carol played Hollywood movies on aliens to at least give students a feel for the possibilities of aliens’ life. She also assigned movies for students to watch at home which they would discuss in class.

Sharon, Susan, and Carol expressed their appreciation for technology to cater to students’ different learning styles. The smart classroom equipped with computer, DVD player and display projector allowed information to be presented in multiple ways that accommodated vocal, visual, auditory, kinesthetic styles of learning, which enriched the learning environment, attracted students to the learning process and increased their learning outcomes.

**Technology May Interfere with Student Life-Learning Connection**

Similar factors negatively affected women faculty’s efforts to help students connect their learning and life. Technical problems, nature of distance in distance
education setting, over reliance on technology, and the hiding feature of technology all interfered with tying student learning with life.

**Technical problems.** Technical problems hinder faculty members at times from teaching with meaning. For instance, when technology broke down, women faculty members were not able to pull out websites or play a movie, it undoubtedly interfered with student learning. Linda was annoyed when technology did not work. She said, “My whole feel for the day is kind of turned off” as she could not do what she wanted and had to “scramble” to do something else, which often did not turn out as good as it likely would have been. Sharon wanted to show pictures and interesting quotes to class on one day but neither the video nor the document camera worked. She was frustrated and had to cut the class short by about 45 minutes.

For distance and online education, the inadequate visual and audio quality of the teacher and students due to technical constraints unavoidably interfered with students’ communication and interaction with each other. If students were not able to have in-depth conversation with the teacher or their peers, their energy and interest in sharing personal experiences diminished.

**Nature of distance.** Like how nature of distance had influenced teacher-student and student-student connection, the fact that people were not in the same space posed challenge for them to have a face-to-face kind of learning dynamic. Typically, as mentioned previously, students attended distance class in the evening after whole day’s work. They may have a hard time concentrating. For online students, Internet was the only vehicle for them to access the teacher and each other. These students often did not have the luxury of getting instant feedbacks such as “I hear what you are saying” or “Yes,
that happened to me too.” Besides, it was expected that online students had a strong sense of self-discipline and a good habit of planning ahead in order for them to finish all the tasks assigned by the teacher. If they failed to read course materials or closely follow their classmates’ posts on the discussion board, their learning would be impaired.

**Technology hides.** At times, students hid behind cell phones, iPods, and laptops, which distracted them from developing real relationships with other people. When they were focused on their own laptops or texting messages to friends in class, their ability to learn and explore their life experiences related to the course content was compromised.

Kimberly addressed this issue from a different angle. She thought that technology “spoon-fed” students because they expected technology to provide them with everything from lecture outline, class notes, and chapter summaries to study guides, which did not encourage much independent and in-depth thinking on their own. Kimberly was concerned about students’ continuous hunger for more materials prepared by technology and avoidance from taking responsibilities for their own learning. Another example of students’ intention to escape taking charge of their learning was when they took the shortcut of borrowing the perspectives of an author, for example, by saying “this author showed us how much prejudice exists in our society towards gay people” instead of reflecting critically on their own experiences. In this way, technology was not encouraging students to dig deeply in their life to see the more complex relationship between their life and learning by allowing them to stay at the superficial level of knowledge acquisition, taking everything for granted.
Over-reliance on technology. Several women faculty members expressed concern with the potential over-reliance on technology by students. Nancy noted that sometimes students were seduced by the excitement of visual images and sounds of technology and spent less time on thinking and reflecting. For instance, some students were attracted by glitzy websites from the Internet but ignored reflecting on the usefulness and thoughtfulness of the information they received. Carol was conservative about the use of some technologies for her students. For instance, she observed her students using calendar on Blackboard as an excuse for failing to pay attention to real deadlines. When used as a crutch, the Calendar became a rationale for procrastinating assignments or missing classes. Carol argued that students should be responsible for their own academic performance, rather than relying on a tool dictating their daily activities. Both Carol and Kimberly were aware of students’ tendency for missing class since they got everything from Blackboard. So they tried to balance between how much to put on Blackboard and how much to teach face-to-face.

Carol and Sharon warned their students, future school teachers, against over relying on technology for their future teaching. Many of Carol’s students were future science teachers in elementary schools that were unable to afford technological equipment. She reminded her students of the shortage of computers and labs and instilled in them an attitude of teaching with low tech and “keep[ing] it grounded for kids.” Sharon was ambivalent about the benefit of technology. She was concerned about the unequal access students had to technology. She kept telling her students, future elementary school teachers, to be “really careful” when they assigned homework to their students. Asking students to search the Internet could mean that “their mothers had to
drive them to the library and pay a dollar an hour to use the Internet.” As the teacher could not control what level of access their students had at home, it was wise of him/her not to ask them to use certain sophisticated forms of technology.
CHAPTER V
CONCLUSION

The results of the study suggest that women faculty’s understanding of connections, their strategies to foster connections and their views and use of technology are grounded in the multiplicity of their experiences and identities that constitute their positionality. I think women faculty’s views and practices of “connection” and “technology” are better understood by the contexts in which they are situated rather than by their gender. Women faculty often assumes multiple identities expressed from different positions within different contexts, which is reflected by the variations in their relationships with students, their different perceptions their student relationship with each other, their different ways of promoting student life-learning connection, and their different views of technology. Besides, variations also occur within themselves from context to context. In this chapter, I want to use the lens of positionality to elaborate on the ever-changing picture of women faculty’ positions toward connection and technology.

Positionality is a theoretical perspective that locates people and their perspectives and practices in relation to others as well as others’ perspectives and practices within constantly shifting social cultural, historical, and political contexts. In this study, the different classrooms represent “one of these constantly shifting contexts” (Maher & Tetreault, 1996, p. 161) where the makeup of gender, race, class, ethnicity as well as other dimensions of students’ and teacher’s social identity is constantly shifting. Both the teacher’s and students’ positions are relational and fluctuating. The dynamics of knowledge construction and the relationships among class participants become unpredictable.
Positional Understanding of Teacher-Student Connection

I see positional understanding by women faculty members underlying their connection with students. They perceive teacher-student connection as fluctuating from context to context. In general, women faculty all long for a close relationship with their students. For instance, these women faculty are careful creating a safe and loving environment for students’ interests in learning to grow and thrive. They center their teaching around students’ curiosity about the course topics, genuinely value students’ opinions and viewpoints, and place their beliefs in students as capable learners and human beings. They try to posit themselves as relatable human beings and do not mind being revealed as imperfect who make mistakes in their work and life. They try hard to remember students’ names, give students prompt feedback on their assignments and exams, respect students’ diverse learning styles as well as students’ request for flexibility in some class related decisions. These efforts attest women faculty’s yearning for a mutually close relationship with their students.

However, the teacher-student connection is carefully gauged under certain contexts. Some factors come into play in shaping and reshaping this connection. For instance, students’ positionalities can affect the dynamic of teacher-student connection. Some students, due to their particular cultural backgrounds, may defer to being too close with the teacher out of a respect for the institutional hierarchy. Personality also plays a role. Shy students may not initiate as many opportunities for interaction with the teacher as talkative students. They may prefer having a private conversation with the teacher. Students with tight work schedule or families with dependents may be too busy to visit with the teacher during their office hours. If a student who is depressed for a particular
reason remains extremely quiet and dispirited for the whole semester, the teacher may assume this student is avoiding contact with her, which in reality might be totally wrong. It’s also possible that some students simply feel remote from the teacher because of his/her prior disagreeable experiences associating with teachers. So, students’ positionalities in terms of their social cultural background, family situation, personality or a particular life situation or experience lead to the altering dynamic of teacher-student connection.

Women faculty’s shifting positions also affect their connection with students. One example of their shifting positions pertains to how, under different contexts, the ground for women faculty’s authority constantly shifts among their extensive knowledge and experiences in the field, students’ learning needs and students’ life experiences. Under the context of a democratic learning environment, they are willing to accommodate students various learning styles and needs and shift the ground of authority to students by virtue of students’ personal experiences only to certain extent. Under the context of evaluation, they shift the authority to their extensive knowledge and experiences of the field that they believe grant them the intuition of the best interest or “really the right thing for students.” From the students’ point of view, the teacher, though with more knowledge and experiences, may not necessarily develop the insight of what students really need or what best benefit students in their life. The teacher inevitably approaches students based on his/her positionality, which may blind him/her from what students can see and feel. The teacher’s expertise in the field does not guarantee that everyone, including his/her colleagues and students, sees the world from the same angle as the teacher. This conditional sharing of authority reveals a discrepancy between their wish to host a
student-centered democratic learning environment and their institutionally sanctioned power to assign grades.

Age, in Laura’s case, uniquely positions women faculty differently in their relationship with students. Her younger age accompanied with a relaxed demeanor makes Laura more cautious in bounding her openness with students. Like Sharon and Linda, Laura is very open in sharing personal stories with students in order to facilitate student learning. For instance, on the topic of moral development, she asked students to help her decide how to explain to her husband’s boss his absence from work that he was sick or went skiing (the true reason), which generated heated discussion among students. However, her age underlying her positionality plays a major role affecting how much and when she is willing to expose her private sphere of life and how much interactions she could have with her students outside class. It is possible that Laura would have avoided some kinds of interactions with students that would be fine with Sharon, for example, texting students, because of their different positionalities.

A woman faculty member’s mothering temperament also positions her at a unique angle within her relationship with students, which is illustrated by Betty’s example of seeing through her students in extraordinary situations. Betty’s comment that “It’s a difficult kind of situation in that I personally like to know students and be friendly, but on the other hand, I’m not your [their] mother” reflects the sensitive nature of teacher-student relationship. When a teacher’s professional position and mothering position are intimately mingled, students may become disoriented by developing distorted expectations for the teacher, thereby reshaping the dynamic of a teacher’s authority relationship with students, which to me presents a “danger” of intimate teacher-student
connection. Easygoing and amenable, Betty may not face the same authority problem as Laura because of her seniority. However, she intimated that some distance helps make for a comfortable teacher-student relationship, even with “respectful” students. This reflects women’s faculty’s concern of being among and above students.

Maher and Tetreault (1994) spoke of the faculty participants in their study that “to deal with their [teachers] own knowledge positionally was easier for most of these teachers than to question the grounds for their authority to evaluate students” (p. 213). “They [teachers] treated the issue of teacher’s authority “in the best of situations” as “a paradoxical and conflicted issue” (p. 213). Their words seem to correspond with my observations of women participants in my study. No matter how empathetic and kind they look and act, how open they are to share personal stories, how passionately they talk about their commitment to equity, they decide deadlines, the readings to be done by students, acceptable papers for the course, the procedure for students to follow to conduct projects, and standard for excellence. As long as these decisions are solely made by the teacher who is inevitably confined by their own positionality, these decisions may not serve each student equally well, which therefore compromises the teacher’s wish to create a democratic learning community.

Other factors, such as family condition, type of classes and the size of classes, also position women faculty members differently in their relationships with students. Kimberly, besides working full time, has a 7-year-old and a 15-year-old child and elderly parents to take care at home. She feels burdened by an average of over 200 daily emails from students. When she is not able to reply these emails in time, students complain to
her, which she feels is unfair. So Kimberly juggles between her family and career responsibilities, a positionality that affects her relationship with her students.

Women faculty members teaching large classes have a hard time remembering students’ names or recognizing students’ faces, except for the few who speak up frequently in class. These faculty may not have the same rapport with students as those teaching smaller classes that offer a more conducive climate for relationships. Some women faculty teaching distance or online courses may feel more remote from their students than those teaching conventional classes because of the technical problems or the lack of physical presence that interferes with the creation of a fluid relationship between the teacher and students. But for Susan who has had years of online and distance teaching experiences, the virtual communication with students is equally comfortable as the face-to-face communication. Class size and conditions of teaching as well as the teacher’s experience with technology underlie women faculty’s positionality that differently influences their connection with students.

The teacher-student connection transforms when both the teacher’s and students’ positionality shift. For instance, when students have graduated from college, they are freed from the position subject to the teacher’s evaluation and the teacher is freed from a position to make judgment. Therefore, a different rapport between the teacher and students come into being, which probably partially explains why Laura felt comfortable to add students who already graduated instead of her current students on her Facebook community.

As women faculty’s and students’ positions constantly shift in a network of relationships, they distance themselves from each other to different degrees, at different
times in different contexts. Their perceptions of authority, age, family condition, the type of classes they teach, their class size, their experiences with technology, and their student populations jointly position them alternatively far from and close to students. It takes tact, wisdom, sensitivity and reception for change on both sides to appropriately adjust teacher-student relationship.

**Positional Understanding of Student-Student Connection**

Women faculty reveal a positional perception of student-student connection based on their differing positionalities, in terms of their student population, and types and size of classes they teach. Nancy teaches a small face-to-face class and her students have taken classes together before, so from her position, they appear to have close relationships. Carol teaches in an auditorium classroom with over one hundred students, so from her position, she observes different group cohesion where students appear more individually oriented, hating sharing grades or being held accountable for other’s performance.

Different class conditions also position women faculty’s perceptions about their student relationship. Women faculty teaching distance and online classes observes different rapport among students than those teaching in a conventional face-to-face setting. Even the same woman faculty who teaches both traditional class and online class could perceive different student relationships. For instance, Susan perceives her online students as more connected than her Interactive Video Conferencing students and even more so than her face-to-face students, though the latter two groups of students obviously have better and more convenient communication links with their peers than the online
students, who rely solely on discussion board or email for interaction. Susan wonders if the relative anonymity facilitates more open talks and feelings of closeness for her online students while students’ physical presence poses roadblocks to their interactions with others in the traditional class.

Some women faculty also note that some students are reluctant to ask and answer questions or voice their opinions in public, possibly because of their introvert and shy personality or concern of embarrassment. Some students display quite the opposite by always having their hands in the air and dominating the class discussion. Facing the challenge of “building coalition among multiple, shifting, intersecting, and sometimes contradictory groups” (Ellsworth, 1992, p. 109), some women faculty members make efforts to change this positional dynamic in their classrooms by trying to equalize student participation in the class activities.

The student-student connection takes different forms and keeps changing in relation to their shifting positions to others. Their previous level of acquaintance, types of classes they attend, class size, and such internal attributes as their gender, race, class, and ethnicity collectively give rise to the positional consciousness that plays a role in students’ constantly varying relationships with each other. At the same time, the teacher’s perceptions of student-student relationship are positioned by the type and size of class they teach.

**Positional Understanding of Student Life-Learning Connection**

Women faculty members articulate their positional understanding of the connection between students’ learning and their lives. It is widely believed that students’
life experiences and their learning are interrelated. Their life experiences pave the way for their understanding and acquisition of new knowledge. Student learning influences their ways of looking at and living in the real world.

A positional understanding of student life-learning connection arises when considering both the positive and negative impacts that life experiences bring to their learning. On one hand, students’ life experiences provide the schema that instantiate, interpret and inform student learning. It transforms learning into a practice of life and links students as individuals to a network of relationships in the society or the whole world. On the other hand, students’ life experiences may handicap and limit their learning. Erroneous pre-conceptions, disadvantaged family situations or unpleasant previous experiences with people linger in students’ mind, which interferes with their learning.

Their positional understanding of student life-learning connection is exemplified by their positional stance on the issue of technology adoption by students. While recognizing the importance of training students with technological literacy and skills needed for their future lives and careers, some women faculty also caution students not to rely exclusively on technology. Carol and Sharon both have students who are future elementary or high school science teachers where shortage of technology is well known. So it is of no less importance for them to “discourage” their students from teaching with technology. The projected future work environment for students positions women faculty not to follow the popular trend of equipping students with modern technologies. In this context, women faculty build the life-learning connection by separating student life from their learning.
Another example illustrating women faculty’s positional understanding of student life-learning relationship is their effort to recognize students’ positionalities by valuing the multiplicity of their life experiences that make social sense of their learning. By accommodating their own teaching to students’ learning styles and learning needs, women faculty cling to a positional view of each individual as a unique human being who learns in specific and unique ways. At the same time, women faculty try to nudge students out of the shadow of negative impact derived from prior life experiences by fostering a positive attitude and modes of thinking in students.

**Positional Use of Connecting Strategies**

I would like to elaborate on some of the strategies used by women faculty members in this study to illustrate their positional approach to promote teacher-student, student-student and life-learning connections. Exemplary strategies I will discuss are questioning, exchanging personal stories, group discussion and project and accommodating to students’ diverse learning styles and needs.

Questioning is widely used by women faculty. They question students in ways that place fundamental weight on students’ responses. For example, “Tell me what kind of ethnography is important to you?”, “What was that experience like in your elementary school?”, and “What does this cartoon tell you?” Questions like these provoke thinking and center around students’ experiences. In this way, they acknowledge students’ interpretative authority as lodged in their many voices and perspectives, which emerged from their unique positionalities. Students’ responses to the teacher’s questions in the form of either a childhood memory or an adult experience of sexism or a soul-satisfying
episode in a political campaign are all affirmed as authentic resources of positionality for negotiating and constructing knowledge.

By interchanging personal stories and experiences, women faculty members try to distance themselves from superior knowledge and reposition their authority in the whole community of learning. Sharon was really sending her students the message that “I was there before and I was one of you” by telling how she had violated teaching principles and offended students’ parents. Kimberly hopes to divert a bit from the positionality of an almighty figure by sharing experiences that made her “vulnerable and real.” By inviting students to share and juxtapose among peers their personal and intellectual experiences in different languages and descriptive lenses, women faculty want to be part of the process of self-evolution where their students and themselves collaboratively complete an ever-partial picture. The boundary between the teacher and students seems to blur when both sides’ experiences are equally cherished.

Student group discussion and group project are also connecting strategies used by women faculty. Underpinning these strategies is women faculty’s recognition of students’ individual uniqueness that collectively contributes to the communal learning. As knowledge is fluid and evolving, women faculty members, in no intent to unconditionally conform with all students’ perspectives, encourage student to try to enter their peers’ world in order to see what they see and hear what they hear. Tisdell (2000) pointed out that “allowing for expression of personal experiences and emotions make visible everyone’s positionality,” and it is especially helpful in melting conflicts among students who come to the classroom armed with more or less some “isms” as part of their identity. Gender, race, class, ethnicity and sexual orientation all inevitably color one’s lens to view
the world. These identity ingredients empower some students while elbowing other to the margins of the classroom discourse. Recalling the debate among the male and female students in Kimberly’s class, I was struck by how students’ different positionalities composed of their social cultural background and their psychological traits and dispositions could interactively empower and disempower them, sensitize and desensitize their mind, and broaden and narrow down their outlooks. Here stands out the challenge of enhancing equal student participation in the learning community with a heterogeneous student population.

Women faculty’s endeavor to accommodate students’ diverse learning styles and needs reflects their concern to authorize everyone to become an independent learning agent and interdependent resources for each other. Betty’s example of helping group members resolve the issue of unequal contribution to the group project manifests her positional consciousness to reposition all group members by virtue of their individual characters and instill in them the attitude of open-mindedness, tolerance and sympathy, which are valuable underlying premises for group work situation. For any class where students are not familiar with each other, the challenge is that “the students’ sense of their own and each other’s positions, and thus their authority, were ambiguous, particularly since many students were still working out ‘who they were’ with regard to many aspects of their identity” (Maher & Tetreault, 1994, p. 161).

This discussion suggests that women faculty develop strategies to create connections by taking into account everyone’s positionality. For instance, by questioning students for their perspectives or conducting student-centered discussion and group project, women faculty are valuing each student’s response derived from their unique
positionality as authentic source of knowledge negotiation and knowledge construction
for students’ own purposes. Women faculty make everyone’s positionality visible, which
could sensitize students’ awareness of the importance of multiplicity and diversity.

**Positional View of Technology**

Unanimously, all women participants embrace a broad definition of technology:
any kind of tool that assists people accomplishing tasks effectively. Few of them, except
Laura and Ruth, restricts their definition of technology to electronics. For Mary and
Sharon, a textbook, chalk or a field trip could be technology. Kimberly approached
technology from an anthropological perspective that “human beings have been using
technology to survive since the dawn of human history”, so anything from digging sticks
to Blackboard was technology. Linda was working with people with learning disabilities.
She defined technology as anything that allowed her to help these people or assisted these
people in their lives. A Velcro strip can be technology because it could assist a child with
a physical disability to pick up toys or a pencil. A portable keyboard with specially
designed software is technology as it assists kids with difficulty with written language to
keep up with note-taking in class.

Donna, Mary and Betty elaborated on their perceptions of technology, which
echoed Clark’s (1994) conceptualization of this concept. Clark defined technology as
composed of delivery technology, such as hardware and software, and instructional
methods, such as pedagogy. Donna indicated that hardware and software constituted one
aspect of technology. Being a master of software and hardware was “not necessarily
going to reinforce your teaching objectives.” Mary recalled the time when PowerPoint
came out new and was used “exclusively and repeatedly over time” and people “were going to scream” if they were shown one more PowerPoint slide. She remarked “not enough presenters took the time to really design the slide show effectively for maximal learning, so those who had to sit through PowerPoint presentations became bored and disengaged.” Betty told her past experience working for a famous computer production company where she contributed as a translator between customers and the “techy people.” She was nicknamed by friends “squishy” because of her “softness” to weave together the technical side and human behavioral side. Her teaching emphasis was on developing and implementing technology to meet an organization strategy, which heavily involved people in the production of technology.

An interesting scene emerged when we switched to women faculty’s use of technology for teaching. Although they define technology in a broad sense, they all focus on electronic based technology except Mary who mentioned the use of white board. Susan taught online and distance education, electronic technology like Internet, Breeze and Interactive Video Conferencing system are the major tools for her teaching, so she focused primarily on the hardware and software inseparable from the distance education setting. Some other women faculty members explained that within the traditional classroom setting, technologies they use happen to have a silicon chip or electronic wires. Mary said she focused on electronic technology because she thought it was what I would be interested in.

I questioned this inconsistency. As carefully as I could, I tried to create an atmosphere of impartiality where my participants took the uttermost liberty to create their own definitions. I think women faculty’s shifting references to technology relates to their
shifting positions from context to context. In the context of the whole human history and society, they define technology as any tool that assists the survival and advancement of life. In the context of education, they define technology as any tool that supports learning and teaching, ranging from a chalk to a field trip to a laptop. In the context of traditional classroom setting, they define technology as electronic tools that they are familiar with. These contexts jointly position women faculty’s definitions and sub-definitions of technology.

Besides contexts, mindset also plays a role. Theoretically, the definition of technology has evolved to include not only hardware and software but also the learning and teaching theories and the instructional design process, which entails thoughtful design, implementation and evaluation of a set of instructional methods. Reflecting on Mary’s response, I think that in today’s society, most people display a propensity to associate “technology” with things that can be plugged into an electronic outlet.

But, without speaking up explicitly, women faculty members’ comments actually reflect an orientation toward an evolving definition of technology. Listen: “I see technology as a great thing, just don’t let it take over. It’s an aid, can’t be the end”; it’s just been another tool that helps facilitate communication”; “It doesn’t change the outcome but just the means”; and “Technology is a support and can’t be the main show.” These comments indicate their belief that hardware and software is just a vehicle to deliver instruction. Successful instruction that improves student learning is backed up with a lot of thoughts concerning learners’ needs, learning objectives and content, instructional design process, and rational integration of technological tools to support the instructional goals. In addition, successful instruction entails the teacher’s own twist of
thinking, passion for her topic, personal understanding of technological tools, and effective teaching strategies. Technology as an information delivery medium can support teaching but in this women faculty’s view cannot replace the unique role of the teacher.

**Positional Role of Technology in Connection**

In the preceding section, I described women faculty’s positional understanding of the concept “connection” and their positional use of connecting strategies. In this section, I will delineate the positional role of technology that affects these connections. Examples include email, breeze and interactive video conferencing, and online discussion board.

Email serves as a prompt venue to connect women faculty with students. Women faculty email students to explain assignments and exams, set up appointments, disseminate information about professional opportunities. However, email is alternatively connecting and distancing. Students may use email to avoid direct contact with the teacher. Some women faculty distance themselves from awkward or thorny questions and problems by taking the time delay expected in an email to come up with a thoughtful response and solution. The lack of physical cues in an email makes it difficult to navigate the emotional exchange among people. It is important to provide thoughtful responses to complex concerns so as to minimize distance between the correspondents possibly caused by the nature of asynchronous exchange. So, it is not email but how email is used that connect or disconnect people.

Breeze and Interactive Video Conferencing are wonderful tools to connect people all over the country. However, in the context of seeking high quality video and audio connections or a face-to-face kind of connection, they are perceived inadequate. In some
cases, feelings of isolation can be intensified, e.g. when there is only one student at a site. Images and voices transmitted through technologies are unable to replace the richness of face-to-face meeting. The fluidity and spontaneity of communication and the dynamic in a shared space is lost. It is difficult to share lived experiences in such a depersonalized virtual environment as a computer based teleconference, which is exacerbated by only one person being able to speak at one time and the fact that many students have never met in person before. In addition, differences in sexuality, race, class, and ethnicity among learners compromise in-depth interactions and collaborations.

Online discussion board is an arena for students to share stories and perspectives and resonate feelings and emotions. It is also a chance for women faculty to take a peek at students’ inner world. Online discussion board encourages a full participation for all learners by crossing over the boundary between their social identities. However, online discussion can be inclusive and exclusive at the same time. Lack of respect for classmates is observed in some students who sometimes make insensitive comments on their peers’ posts by hiding behind the communications on discussion board. Maybe for the marginalized group, online discussion can liberate them from the constraints imposed by their social identities to some extent. But the privileged group remains prejudicial and stereotypical, which can be magnified behind the veil of the more or less impersonal online discussion board. Bailey (1995) asserted that “online interaction is anything but a Utopia of democratic communication” (p. 19).

These positional environments motivate women faculty to invent strategies so as to positionally make up for the disconnection. For instance, they make their instructions explicit, insert cartoons or jokes amid the audio-recorded lectures, offer students self-
checking reviews, structure learning activities in an engaging manner, and mediate online discussions. Many of them insist on devoting thoughtful thinking into the design of lessons so that technology supports instead of blocking learning.

**Concluding Remark**

This study suggests that women participants exhibit a positional understanding of the teacher-student, student-student and student life-learning connection. Technologies in the form of technical tools that transfer information play a positional role in the process of their establishing these connections. It appears that the connecting strategies women faculty use are compatible with the learning environments that technologies have the potential to offer. From the positionality perspective, while these technologies show promise for supporting connection between the teacher and students, among students and between student life and learning, some of their disconnecting or exclusive features are noted.

This study represents my adventurous attempt to make a positional interpretation of the concept of “connection” and “technology.” I believe that positionality offers an instrumental lens for a full-blown understanding of the dynamics inside these two concepts and their relationships. As women, the main focus for this study, are best approached from their relational positions in a constellation of constantly shifting contexts instead of their internal essence, so are their perspectives and practices of the concepts of “connection” and “technology.” Women faculty members are constantly positioned by their gender, race, ethnicity, sexual orientation, their psychological and biological attributes, their family situation, the size of and composition of their classes,
their teaching mode, their teaching beliefs, their knowledge of and prior experiences with technology, their classroom conditions, their student populations, and the list goes on. None of these factors can be studied in isolation or in separation from the social cultural historical and political contexts where they reside. Rather, these factors always develop in interaction with other dimensions of identity. These factors, either in form of dimensions of personal identity or contextual elements, collectively and interactively influence women faculty’s understanding of and ways of promoting the multiple senses of “connection,” with or without technology. Women are not just static individuals but migrants that occupy a place at a point of time within both immediate and distant contexts.

The meaning of connection is not uniform for every women faculty member or for the same woman faculty member under different circumstances. One example relates to the shifting ground of authority from women faculty’s extensive knowledge and experiences in the field as an evaluator to students’ personal life experiences in a group discussion situation, which constantly reshapes the teacher-student connection. In the same vein, the meaning of student-student connection is complicated by the multiple and diverse positions of heterogeneous groups of students.

Women faculty members’ view of technology mirrors their positional understanding of “connection.” Face-to-face meeting with students is mainly desired but sometimes avoided with email in times of dilemma or stress. Breeze and Interactive Video Conferencing system connect geographically separated people, but at times the connection is confining, which can be overcome, however, by careful planning and innovative thinking. The discussion board can be both inclusive and exclusive. Email,
cell phones and discussion board connect and disconnect people at times by substituting electronic people for real human beings.

Variations among women faculty members illustrate their different positions in their relationship with technology. Susan, a distance educator and a self-titled early adopter of technology exhibits much higher enthusiasm than Mary, who mostly teaches in traditional classrooms. To Susan, technology is everything without which “how could you have any connection with students?” Mary is not so convinced by the magic of technology and concerns about the potential over-reliance on technology by teachers. In addition, Mary’s attitude toward technology could also originate from her field, linguistics, which demands face-to-face contact, between the teacher and students. Nancy teaches distance education courses before but still holds a much less optimistic view than Susan because of some pretty unpleasant experiences with technology. To Linda, technology is a “miracle” due to its capability to change the lives of people with learning disabilities, which may not be perceived as such by those teaching normal students. Kimberly feels helpless because of her lack of sophisticated technological skills. This is exacerbated by her extremely heavy family duties. Nobody else among the participants emphasized the time issue as much as she did.

Looking back, although the word of “positionality” is never uttered, it penetrates women faculty’s definition of technology, their understanding of “connection” and their view of technology to create and maintain connection. Having been assumed to share the same biological and psychological attributes, women faculty unveil themselves as more contextual and situational. It is unfortunate to continue defining women as a collection of fixed characteristics that are given, ahistorical, and universal. I believe in positionality
because it nurtures a healthy outlook in us by defrosting pride, prejudice and stereotypes that blind us from the dynamic and impermanent nature of this world.

The positional view avoids over-generalizing about the role of “connection” and “technology” in women faculty’s teaching by considering not only diversity among women but also instability within women. The positional view frees us from making stubbornly uniform expectations that group all women faculty members into fixed categories. The themes and sub-themes I developed for this study instantiate my participants’ teaching perspectives and practices and are not meant to dictate that all women faculty conform to these themes all the time, everywhere. Additionally, these themes are a joint product of both my postionality and my participants’ positionalities. A different researcher may very well possibly come up with different themes. The positional view avoids dichotomizing women’s understanding of “connection” and “technology” – by assuming that if a woman faculty displays a tendency to closely relate to her students, all women faculty should do so in the same way; if a woman faculty subscribes to connected teaching approach, she cannot take a critical stance toward and disagree with students’ perspectives; or if a woman faculty appreciates the connecting capability of online discussion board, she must hold this view all the time (Belenky et al., 1997). The positional view also unsolidifies women faculty from fixed modes of using technology by breaking down the stereotypical opposition between men and women. The women faculty in my study are certainly not techno phobic with only tepid interest in some of the technologies. They are simply selective in picking up technologies compatible with their pedagogical beliefs. Following the wisdom that it is not the piano but who plays the piano that matters, the view of positionality opens our mind to infinite
possibilities around “connection” and ”technology,” rather than exclusively pinpointing a solo view of these two concepts.

From the view of positionlity, women faculty are not longer a fixed collection of nurturing, loving, caring, or inadequate with technology. Their identities take root in multiplicity in light of their shifting positions under various contexts. In the position of authority, they can be perceived distant, demanding, and tough. In the position of a member of the learning community, they become genuine, cordial and approachable. They could also take numeral other positions between closeness and distance in relation to their students. Women faculty are far from unified human beings, so does everyone. Under different contexts, they are composed of multiple identities and taking multiple positions, which may be inconsistent or even contradictory.

**Future Research and Practical Implications**

In my study, all, except two, women participants were recommended by instructional designers who had worked with these women faculty and thought these women faculty would be interested in participating in my study. This suggests that most of my participants take an active part in adopting technologies for their teaching and some of them are technologically sophisticated subjects. In future research, it would be interesting to examine reports from those who may not be as open as my participants on their perceptions of using technology for teaching.

This study examined only women faculty’s perceptions of connection between the teacher and students, among students, and between student life and learning and how technologies positionally affect these connections from women faculty’s perspective. As
students play an important role in the learning process as well as the construction of connections between the teacher and themselves, among themselves and between their life and learning, future studies could investigate students’ views of the process of establishing these connections as well as how they perceive technology could foster these connections. This knowledge may either conform with or contradict women faculty’s views but will contribute to a more holistic picture of “connection” and “technology.”

In this study, I choose to focus on women faculty because literature suggests that they are not necessarily techno-phobic and their use of technology is related to their instructional beliefs in connections. I believe both women and men are better comprehended through their constantly shifting positions in different contexts rather than by their gender. It would be also fascinating to examine the pathways male faculty members travel to approach “connection” and “technology,” which will sophisticate our understanding of these two concepts.

Positionality is my theoretical lens to interpret my findings. Women faculty’s positionality consists of their gender, race, ethnicity, class, age, family situation, teaching beliefs, knowledge and prior experiences with technology, type classes taught, and their student populations and this list could be endless. This study is limited by touching many aspects of positionality at a moderate level. A fruitful area for future research could be studies that are more in depth, focusing on just the a few of these aspects of positionality. For instance, how do both the teacher’s and students’ gender, race, class and ethnicity, and the social cultural and political atmosphere of the researched institution intersect to influence the process of knowledge construction?
This study suggests that women faculty’s positionality affects their teaching around issues of authority, relationship development, and knowledge construction. It is worthy of undertaking ongoing inquiry of the possibilities and limitations of faculty’s positionality as their teaching is inevitably bounded by their positionality that is constantly shifting and changing. As a teacher’s epistemology and knowledge is always positional, it is important to constantly examine the conditions that inform their positional knowledge and teaching, which will promote education as a whole in the long run.

This study indicates that technologies can be both connecting and disconnecting. It seems unlikely that technologies simply deliver connection by virtue of their mediated nature. Further research could examine in depth the specificity of particular technology-mediated learning environment and develop more nuanced strategies to enhance connection.

The lens of positionality nurtures in us an awareness that we are always relational in the social structures of gender, race, ethnicity, and class etc., and we always construct knowledge in relation to others, and therefore this knowledge is always contextual, partial and sometimes even oppositional. Below, I would like to share how the lens of positionality could help us stretch our thinking about instructional design, and how it could benefit instructional designers and higher education institutions.

Instructional design is generally considered to be a systematic design process, which is largely rooted in the behaviorist learning theories (Burton, Moore, & Magliaro, 1996). For instance, ADDIE model is composed of five phases: analysis, design, development, implementation and evaluation, in a step-by-step sequence. While realizing the importance of conducting tasks in each of these phases, I think many of us design
instruction in relational and spontaneous ways that are often not present as linear
fashioned. Instructional design happens within social, cultural, and political contexts, and
is undertaken by instructional designers with personal values and beliefs through social
interactions. Instructional design cannot occur value free and context free, therefore, it
entails responsive, innovative, intuitive, and tacit elements in addition to the planned and
ordered template. The positionality view offers a holistic approach to instructional design
by bringing forward the unpredictable and spontaneous elements in this process, and by
validating personal positioning as a source of knowledge construction, which shakes the
ground of the ordered, prescriptive, and formulistic approaches of traditional instructional
design.

Campbell, Schwier, and Kenny (2009) suggested that the process of instructional
design involves both instructional designers and faculty members, and instructional
designers are often more than technicians but change agents with a set of core values
embedded in the instructional design process they engage in. The positionality view will
help instructional designers better understand faculty members’ needs and values and
build trust between each other, as suggested by Campbell et al. (2009), to achieve shared
thinking and commitment to the development of instructional product. For instance, what
instructional designers think as self-explanatory may not be perceived as such by faculty
members. Sometimes it will be more helpful if they could patiently walk faculty members
through a tutorial session on the use of certain technologies instead of leaving faculty
members going it through alone. Additionally, the lens of positionality encourages
instructional designers to take into account many factors underlying faculty’s questions
and problems. One example relates to faculty members’ hope for more targeted
assistance on the integration of curriculum into the use of technology. Many of faculty’s questions are not simply technical. So, it will be helpful if instructional designers could consider the teaching context like teaching objectives and teaching content etc. when assisting faculty members to use technology.

Higher education institutions could embed this positional awareness in their evaluation of faculty’s adoption of technology. Criteria of evaluation could be more flexible in terms of evaluating one’s achievement. For instance, what is counted as “effective use of technology” may not be necessarily reflected by the amount of technologies adopted, but what thoughtful purposes in teaching and learning have been achieved. In the same vein, a faculty member with extensive experiences with fancy technologies may not demonstrate the same level of understanding of the pedagogical rationale under the use of technology as another faculty member who may focus exclusively on one technology such as email but use it creatively to enhance learning and teaching.


Appendix A

IRB Form
INFORMED CONSENT

Women Faculty Members’ Use of Technology

Introduction/Purpose
Dr. Nick Eastmond and Wei Zhai (a doctoral candidate from the department of Instructional Technology) are conducting a research study to examine how women faculty members use technology to promote the connection between the students and themselves, the connection among students and the connection between the subject knowledge and students’ life experience. You have been invited to take part in my study because your experience of using technology to support these multiple senses of connection is recognized as a valuable source of information and you have expressed willingness to share this information with me.

Procedures
If you agree to be in this research study, the following events can be expected to occur.
1. You will be interviewed by me regarding your teaching philosophy, your rationale for choosing technology for teaching and your experience of using technology to establish and strengthen your connection with the students, the connection among students and the connection between the subject knowledge and your students’ life experiences. The interview will take approximately an hour.
2. I will follow up by email after this interview is transcribed to inquire if there is anything else you would like to say. Additionally, the researcher will invite you to check the transcribed interview for accuracy.
3. I will observe your classes once or twice.
4. I will invite you to contribute your opinions during the process of data analysis.

Risks
Participation in this research study may involve some risk or discomfort which may include: Sharing personal experiences and decisions with the researcher, etc.

Benefits
There may or may not be any direct benefit to you from the results of this study at this time. However, the information gained from this study will enrich our understanding of women faculty members’ use of technology for teaching and value their experiences in its own right.

Explanation & offer to answer questions
Wei Zhai has explained this research study to you and answered your questions. If you have other questions or research-related problems, you may reach Professor Nick Eastmond at 435-797-2642.

Extra Cost(s)
There will be no fees for participating in this research.

Voluntary nature of participation and right to withdraw without consequence
Participation in research is entirely voluntary. You may refuse to participate or withdraw at any time without consequence or loss of benefits. You may be withdrawn from this study without your consent by the investigator if you are found not to meet the criteria for the study.
INFORMED CONSENT
Women Faculty Members’ Use of Technology

Confidentiality
Research records will be kept confidential, consistent with federal and state regulations. Data will be de-
identified for transcription. No identifying information will be kept with transcripts. Only my major professor
and I have access to the data and the researcher will take every precaution to care for the gathered information,
keep any identifying documents in a locked cabinet and destroy them one year after the completion of this study.
There is minimal chance of loss of confidentiality.

IRB Approval Statement The Institutional Review Board for the protection of human participants at USU has
approved this research study. If you have any questions or concerns about your rights, you may contact the IRB
at (435) 797-1821 or irb@usu.edu.

Copy of consent You have been given two copies of this Informed Consent. Please sign both copies and retain
one copy for your files.

Investigator Statement “I certify that the research study has been explained to the individual, by me or my
research staff, and that the individual understands the nature and purpose, the possible risks and benefits
associated with taking part in this research study. Any questions that have been raised have been answered.”

Signature of PI & student or Co-PI

Nick Eastmond, Ph.D.  ______________________________  Wei Zhai
Signature of Principal Investigator  Signature of student researcher
( Telephone – 435-797-2642 )  ( Telephone – 435-512-9599 )

Signature of Participant By signing below, I agree to participate.

Participant’s signature ______________________________ Date ______________________________
Appendix B

Bracketing Interview
This interview was conducted with a Chinese student Ms. Bin Liu at my home in May of 2009.

First, could you tell me more about yourself and your family?

Ok. I was born in Beijing. I am the only child in my family. My father works as an administrator in Beijing Aeronautical Institute. My mother works in Peking University Press as an English editor. I attended school and college in Beijing. After I graduated from college, I taught business English in the Canadian Institute of Business and Technology for one year. That one year of English teaching ignited my love for teaching. One year later, I came to Utah State University to study for my Master’s degree in the department of Languages, Philosophy and Speech Communication. I taught Chinese on campus for two years. In 2003, I enrolled myself in the Department of Instructional Technology and Learning Sciences to study for my Ph.D degree. Now, I am in the stage of planning to defend my proposal and conduct my research.

What is the background of your study? What do you want to know from conducting your study?

My interest in this topic about women dates back to my research work for ADANCE. ADVANCE is a project funded by National Science Foundation, which aims at increasing the recruitment and advancement of women faculty in the field of Science and Engineering. Utah State University is one of the nineteen universities that received one of these grants. This is a five year research study. I started working for ADVANCE in the winter of 2003. My work is to assist a qualitative researcher in the process of collecting data, analyzing data, and writing articles to report our study. Our work, which is a small portion of the ADVANCE project, is focused on transforming the department work
climate for both men and women faculty. The theoretical framework for our work is called Dual Agenda model, which asserts that increasing the effectiveness of workplace climate will benefit both men and women. We went into the departments of College of Science and Engineering and interviewed with both male and female faculty members. Throughout this process, I learned more about women faculty members’ work and life and how they made a balance between the two. That was the start of my interest in a topic about women. Also, as I was studying in the Department of Instructional Technology and Learning Sciences, I felt that I needed to do a dissertation relating to technology. So, I decided to study women faculty’s use of technology.

I did some review of the literature. Many survey studies suggested that women have lower interest and efficacy in, negative attitude toward and higher anxiety about the use of computer or computer-related technologies. Some studies indicated that women faculty members tended to rate their level of knowledge and experience in using technologies lower than male faculty. However, some other studies showed that women faculty members used as frequently as male faculty members such technologies as word processing, computer spreadsheet, email, chat room, bulletin board, discussion boards, and different forms of distance education technologies. Some researchers suggested that women faculty members tend to use technologies that supported their students learning styles and needs, and facilitate their interactions with colleagues and students.

At this point, I started doing another review of literature on women’s ways of learning and teaching and found that many women embrace a connected approach to learning and
teaching. They prefer to learn in an environment that offers opportunity for them to interact and communication with each other and that offers mutual support and caring. When they are teachers, women tend to translate their preference for a leaning relationship with others into their ways of teaching. For instance, they tend to adopt strategies that enhance the connection between students and themselves and among students. There is a third section of literature review that shows technologies have the potential to support the notion of connection espoused by women faculty members.

The review of literature is an ongoing process, which is also a history of how I have started with a broad interest in women as a research topic and gradually narrowed it down to the one at this point: women faculty’s use of technology to promote the multiple senses of the notion of connection. I want to understand how women faculty members use technology to promote their connection with their students, the connection between students, and the connection between student life experience and the subject knowledge. From reading the literature, I learned that women faculty members lend their willing ears to students’ voices and respect those voices as valid. Women faculty members encourage students to draw on their own life experiences in the process of knowledge acquisition. They also encourage students to apply the newly acquired knowledge into their lives by turning knowledge into action. All these elements of teaching praxis reinforce the multiple senses of connection mentioned above. I am also expecting and eager to hear women faculty’s teaching practice that I haven’t read about in the literature, which will enrich our knowledge of women faculty members’ experience with technology usage.
You take a positionality view for your theoretical perspective for your dissertation. Can you talk more about how you had developed this perspective? For instance, how did you form the view and what influenced it?

I don’t believe that I developed this view early on in my life. Maybe gradually, I started developing a positionality view, but without being aware of what was it until I read the work by Linda Alcoff, with which I resonated significantly.

The education system in China is a bit rigid, I think. For instance, I grew up with a pretty dichotomous mind, thinking that everything is categorized as right and wrong, good and bad, black and white etc. In class, I don’t recall many opportunities for us as learners to voice our viewpoints nor were all these viewpoints valued. The teacher seemed to be the authority who gave the final say. I was not very comfortable with the “only one answer” to questions. When the teacher invalidated a student’s viewpoint, students sometimes did not understand what wrong was with their answers except their answers differed from that of the teacher. To me, this way of teaching is stifling for the learners’ intellectual and affective growth. I think no matter how young we are, we have our unique ways of seeing the world which may differ from that of the teacher. It is unfortunate that young children’s perspectives are sometimes shrugged off by adults as insignificant or even nonsense.

I think I am uncomfortable with the overall climate in the school system in China. Although my experience during college years got better, I think there was still a tendency to stress a solo answer to questions or a solo interpretation to issues. I don’t remember
being taught explicitly that any issue or person can be multi-faceted, and we could get different views if seeing them from different angles. It is like looking from the top of a kaleidoscope while keeping turning the tube, we see different patterns formed by those colored glass or beads. Different patterns represent different facets of a person or an issue. There is hardly an absolutized definition of people or events. After all, what is “good”? What is “bad”? A bad incident may turn out good in the long run. I couldn’t think of anybody as so bad that she/he doesn’t have any strength. In addition, what is regarded as “good” or “bad” is shifting in relation to people and situations.

I remember having a discussion with my mother concerning one of my classmates because my mother asked if I could keep a distance from her. My middle school teacher talked to my mother to suggest me not to be too close to this girl, who did not do well at school. I told my mother that not having good grade was not the sole standard to judge a person and therefore did not disqualify this girl from being my friend. I wanted to help her by doing homework and having fun together. Plus, I thought she was a lovely girl, regardless what her grade was. I asked my mother if everybody thought the same way as my teacher did, and if everybody shunned this girl, how would we expect her to have friends and make progress? My point is we can’t judge a person based on one single facet of him/her at single point of time in her life. We have to take into account our positionality and the positionality of those being judged in making the judgment.

Not only people, but issues can elicit different responses depending on the positionality of the observer. To me, the violence incident of 1989 Movement in Beijing, the protests
in Lhasa, Tibet, the war of Iraq, and the negative attitude from the president of France toward Beijing Olympic game all raise from the difference among positionalities.

Religion is another example. Some people choose to convert themselves to Christianity, and some others choose Buddhism. We can’t give an overall answer as to which religion is better because they both suit people’s needs, different needs. People have a variety of issues that a single religion may not be able to address. So, people, due to their different life experiences, at different timing, under different situations, will choose different religions for their own good. Holding different positionalities is not wrong until we only stick to our own positionalities without showing sympathy with others’ positionalities.

We talk about seeing from others’ eyes, but it seems pretty difficult to actually put it into practice. It is important to note that not only do we tend to have different positionalities from each other, but we also tend to develop different positionalities from time to time, from place to place, from situation to situation. The fluid nature of positionality poses an extra layer of difficulty for us to live with it appropriately and wisely.

Those are some examples of how I started approaching this world with a positionality view. The positionality view not only allows me to understand the various dimensions of people and issues, but also endows me with the ability to appreciate multiple perspectives without making negative judgment against those different from mine.

**What is your perspective on gender? Did you take a positionality view on it?**

I think my view on gender is positionality-based. My current view on gender evolved over the past decade. My view on gender would have been different if I hadn’t come to the United States, hadn’t lived with American families, hadn’t come to the department of
Instructional Technology and Learning Sciences, hadn’t worked for ADVANCE, and hadn’t chosen a topic on women, because of which I intensely read about feminist theories for months. My view would be different if I hadn’t gone through the life experience as a woman, which is tinged with pride, love, beauty, fascination, and doubts. I love being a woman and wouldn’t trade it for anything. My point is that my current view on gender is a crystallization of my life experience, biological traits, and contexts, which gives rise to my positionality. I am grateful for where I am now because I learned so much about women and am thirsty for learning more.

But I also need to stress that my current view on gender may change with the change in my positionality as time passes by and situation fluctuates. I can never claim that my view on gender is eternal because as I age, as I run into new things, events and incidents, as I learn more about people around me, my prior perspective on gender is going to integrate new ingredients, and may or may not discard some old ingredients, and therefore my stance on these issues will be reconfigured. Positionality is constantly shifting and this concept sometimes makes me question if I ever know who I am or if there is a real me. Today’s me can be different than the previous me, the me in the United States can be different than the me in Beijing, China, and the emotional me can be a far cry from the peaceful me. Think about when we say “I could have done it differently if I were ten years older” or “I could have responded to you with more courtesy if I were…”, which indicates that we are subject to “positionality”, the change of which dictates who we are and how we think and behave. I think that is the fascinating core of this concept.
What is your perspective on women?

I want to cite a PowerPoint presentation sent by my friend to answer this question. The main message of this presentation is that women are soft and strong. They take great care of family and people around with both their gentle and tough traits. They kiss and hug to heal illness and fatigue. They fight against injustice and unreasonableness. They are strong enough to smile and sing when they feel like crying. They have the strength to endure hardship and continue to go on when others have given up. As a contrast, just for fun, I want to share another message passed by my friend talking about the stereotype of men. The central point passed in this message is that “because I am a man, so I know how to fix a car, I will hold the TV remote control while watching TV, I will wander around in the yard with a bottle of beer in my hand while my wife does all the cooking and cleaning inside the house, and I will become impatient if my wife asks which pair of shoes she should wear because I don’t care except “can we just go?”

I resonate with these images of men and women. I find the stereotype of men funny but somewhat true. I like the first presentation material because it does not absolutize women into a fixed category. Women are not only caring, gentle, sensitive and peaceful but also tough, strong, brave and confident in their ability to carry on heavy duty as men. I mentioned in my feminist theoretical piece that in many societies, women are often subject to a double-bind situation of sex stereotyping. If women are feminine enough, they are excluded from opportunities for promotion because they are assumed to be incapable. If women are unwomanly enough, they are accused for being too masculine and intimidating. I think women should be evaluated based on their positionality.
Different situations requires the utility of different attributes. Additionally, women are often constrained to reveal their true selves in public due to social cultural stereotypes of what a woman should be like. I think these sex stereotypes more often than not undermine women’s real competence.

Women as a category is fluid and shifting. My understanding of it is changing as well as everybody else’s. As we travel across different periods and different facets of our life history, we will develop different perspective on women and the reason resides in our varying positionality.

**How do you connect your positionality view with your research topic?**

With my positionality view, I will not approach women faculty members’ use of technology with a pre-conceived assumption concerning the reasons for their connected way of using technology for teaching. I believe there can be many reasons that women faculty members adopt a connected approach to teaching. It could be a natural disposition, the nature of the course, the nature of the technology used, or simply a need for group work. I don’t know. But I know the reason is multi-fold.

**Good. You have articulated your perspective on gender and women. I wish you good luck on your dissertation work.**
Appendix C

Interview Protocol
Interview Protocol

1. Could you tell me about your background that led to your teaching in this university?

2. Could you tell me about your education background in technology, such as your experience of attending to workshop or seminars on technology adoption, or if you are interested in playing with technology, your experience in integrating technology into teaching, etc.

3. What technologies have you used or are you using for teaching? How do you use them? (example)

4. How do you make decisions about the use of technology in your classroom? (probe)
   - What factors influence your decisions?
   - Do you encounter any challenge when choosing technology?
   - How do you cope with challenges when they arise?
   - How could the university better facilitate the use of technology?

5. Which course or courses (is) are you most proud of or best reflect your teaching philosophy or you got closest to your goals as a teacher and your goals for your students?

6. I would like to have you describe your understanding about the process of learning? (How does learning take place? What does the process of learning look like to you?)

7. I would like to have you describe your understanding about the process of teaching? (What matters to you in your teaching?)

8. What is your definition of technology?

9. Teacher-student connection
   a. Could you explain for me how you understand the teacher-student connection?
   b. What strategies do you use to relate (interact, communicate, cooperate and collaborate with) to your students?
   c. How does the use of technology affect your relationship with your students?

10. Student-student relationship
    a. Could you explain for me how you understand the student-student connection?
    b. What strategies do you use to create opportunities for your students to interact (collaborate) with each other? Do your students have ample opportunities to voice their opinions, comments or thoughts? Perspectives?
    c. How does the use of technology affect these interactions?
11. Learning - life
   a. Could you explain for me how you understand the connection between student learning and their life experience? (How does life experience influence formal learning?)
   b. How do you help your students use their life experiences in their current learning tasks? How do you help your students to apply the knowledge into their life?
   c. How does the use of technology affect this relationship?

12. Overall, do you think the use of technology has changed your ways of building the connections we talked above?

13. Do you have any additional thought or comment on this topic?
Appendix D

Glossary of Technological Terms
Blackboard - an electronic course management tool that enables faculty and students to communicate and collaborate online through real-time chat forums, asynchronous discussion boards, Email, and online file exchanges. The software also features an online grade book and survey/quiz tool. Blackboard grew out of WebCT. (http://en.wikipedia.org/wiki/Blackboard_Academic_Suite)

Breeze - software used to create information and general presentations, online training materials, web conferencing, learning modules, and user desktop sharing. (http://en.wikipedia.org/wiki/Macromedia_Breeze)

Camtasia - Camtasia Studio is a video-based screen capturing software program. It is analogous to using a video camera to record your screen. However, unlike using a video camera, the software is installed on your computer, so your screen captures are directly recorded to a digital video format with higher quality audio. Camtasia can also be customized to capture the entire screen, a specific window, or user-defined region. Screen capture videos can be recorded with or without voice narration, and can be annotated after recording. (http://www.wpi.edu/Academics/ATC/Collaboratory/HowTo/Camtasia/camintro.html)

Document camera - Real-time image capture devices for displaying an object to a large audience. They are, in essence, high-resolution web cams, mounted on arms so as to facilitate their placement over a page. This allows a teacher, lecturer or presenter to write on a sheet of paper or to display a two or three-dimensional object while the audience watches. (http://en.wikipedia.org/wiki/Document_camera)

Electronic course reserves – a web-based program housing and displaying teacher’s teaching materials for students. It’s password protected.

Email – a way of exchanging digitalized mails.

Garage band – a software to create little popcasts.

I-clicker – An audience response system in the form of a hand-held device that allows students to respond to instructor’s questions by clicking a button on the device that will be received by the instructor’s computer. The students’ responses result can be displayed in a graph. (http://iclicker.com/dnn/AboutIClicker/WhatIsAClicker/tabid/143/Default.aspx)

Interactive Video Conferencing (IVC) – A kind of technology that allow students at many locations to all be part of the same classroom and interact in real time with their instructors and classmates through two-way audio and video. (http://distance.usu.edu/htm/ibc/)
Jing - Jing is a screencasting software and is free to download and use. It lacks many features that proprietary screencasting software has. The software takes a picture or video of the user's computer screen and uploads it to the Web, FTP, computer or clipboard. A URL is automatically created and can be shared with others to view or access the uploaded file. Jing is compatible with Macintosh and windows. ([http://en.wikipedia.org/wiki/Jing_(software)](http://en.wikipedia.org/wiki/Jing_(software))

PDF annotator - PDF Annotator lets the user open any PDF file and add annotations, using the mouse or a Tablet PC pen, directly on the PDF file's pages. The annotated documents can then be saved directly back to PDF format. In this way, anyone can read or print the annotated PDF documents. Annotated documents can also be easily attached to emails. ([http://www.ograhl.com/en/pdfannotator/](http://www.ograhl.com/en/pdfannotator/))

PowerPoint – A presentation software.

Respondus - Respondus is a powerful tool for creating and managing exams that can be printed to paper or published directly to Blackboard, WebCT, eCollege, ANGEL and other eLearning systems. Exams can be created offline using a familiar Windows environment, or moved from one eLearning system to another. (1) ([http://www.respondus.com/products/respondus.shtml](http://www.respondus.com/products/respondus.shtml))

Sibelius – A software for notating music.

Smart Board - an interactive whiteboard develop by SMART Technologies. It is a large touch-sensitive whiteboard that uses a sensor for detecting user input (e.g. scrolling interaction) that are equivalent to normal PC input devices, such as mice, keyboards, etc. A projector is used to display a computer's video output onto the whiteboard, which then acts as a huge touch-screen. ([http://en.wikipedia.org/wiki/Smartboard](http://en.wikipedia.org/wiki/Smartboard))

Smart classroom - A smart classroom is a classroom that that has an instructor station equipped with computer and audiovisual equipment, allowing the instructor to teach using a wide variety of media. These include DVD and VHS playback, PowerPoint presentations, and more all displayed through a data projector. ([http://www.monroecc.edu/depts/instech/SmartClass.htm](http://www.monroecc.edu/depts/instech/SmartClass.htm))

Website - A website (or web site) is a collection of related web pages, images, videos or other digital assets that are addressed with a common domain name or IP address in an Internet Protocol-based network. ([http://en.wikipedia.org/wiki/Website](http://en.wikipedia.org/wiki/Website))

Wimba – a Web conferencing tool that allows groups of individuals to communicate real-time via voice and graphics over the Internet. Wimba events typically have a presenter and participants who collaborate to conduct meetings or class events. ([http://www.wpi.edu/Academics/ATC/Facilities/Wimba/what.html](http://www.wpi.edu/Academics/ATC/Facilities/Wimba/what.html))

Youtube – a video sharing website on which users can upload and share videos, and view them in MPEG-4 format. ([http://en.wikipedia.org/wiki/Youtube](http://en.wikipedia.org/wiki/Youtube))
Whiteboard – A whiteboard (also known as a markerboard, dry-erase board, dry-wipe board or a pen-board) is a name for any glossy surface, most commonly colored white, where non-permanent markings can be made. Whiteboards operate analogously to chalkboards in that they allow markings to temporarily adhere to the surface of the board. The popularity of whiteboards increased rapidly in the mid-1980s and they have become a fixture in many offices, meeting rooms, school classrooms, and other work environments. (http://en.wikipedia.org/wiki/White_board)
VITA

Wei Zhai  
9 A, Aggie Village  
Logan, UT  
84341  
(435) 512-9599  
weizhai2000@gmail.com

EDUCATION

Ph.D., Instructional Technology and Learning Sciences  
Department of Instructional Technology and Learning Sciences  
Utah State University, Logan, UT, December, 2009  
Dissertation: Connection, Technology, Positionality: An inside look at women faculty’s positionality toward “connection” and “technology”

M.A., Second Language Teaching  
Department of Languages, Philosophy and Speech Communication  
Utah State University, Logan, UT, 2002

B.A., English  
Department of English  
College of Arts and Science  
Beijing, P.R. China, 1999

TEACHING EXPERIENCE

Chinese Adjunct Instructor 2002-2003, 2008-2009  
Department of Languages, Philosophy and Speech Communication  
Utah State University  
Designed and taught Chinese 1010, 1020, 2010, 2020

Chinese Teaching Assistant 2001–2002  
Department of Languages, Philosophy and Speech Communication  
Utah State University  
Designed and taught Chinese 1010, 1020
English Instructor 1999-2000
Canadian Institute of Business and Technology (CIBT)
Beijing, P.R.China

Designed and taught Oral English and Business English

RESEARCH AND PROJECTS EXPERIENCE


NSF ADVANCE – US is a Supportive Workplace Initiative dedicated to improve the recruitment and retention of women faculty in the College of Sciences and Engineering in higher education. I worked as a qualitative researcher for the departmental transformation program. My major responsibilities were to: a) schedule, conduct and transcribe interviews with faculty members; b) analyze and code interviews; c) review documents; d) observe and record department events such as department retreat, lunch seminar and coffee hours; e) maintain ongoing report to the principal investigator of new findings.

Online training course for teaching “Opera by Children” 2004

The client for this project is Utah Festival Opera Company. Our team was tasked with producing a web-based instruction (http://operabychildren.org/training/) for teachers in Utah and other parts of the US to instruct them on how to facilitate the production of Opera By Children – a program designed to allow kids to create their own operas. My major responsibilities were to: a) design instruction for teachers; b) write video scripts; c) act for video demonstration; d) help team members with their tasks in times of need; e) maintain regular update of each other’s progress.

Thomson Learning Inc. 2003

I worked as a freelance test item writer for NETg (a division of Thomson Learning Inc.). My major responsibilities were to: a) study and research on a variety of corporate training course content; b) design test items for the online training program.

RESEARCH REPORTS


PAPERS IN PROGRESS

Zhai, W. Western Women Faculty’s Use of Technology to Promote Connections. (abstract accepted, full paper under review)

Zhai, W. Looking at Women from A Positionality View.

Whitaker, M., Callister, R., & Zhai, W. Process Gap/Gender Gap: A Two Sided Coin in University Science and Engineering Departments.

Whitaker, M., Callister, R., & Zhai, W. Using Distributed Leadership in Higher Education.

PROFESSIONAL DEVELOPMENT

Presented on Women Faculty’s Perceptions of Technology in the Process of Creating and Maintaining Connections, Intermountain Graduate Research Symposium, Logan, UT, 2010

Presented at a panel discussion on the Implications for ID practice of Instructional Designers’ Cultural Identities, annual conference of Association for the Advancement of Computing in Education (AACE), Vancouver, Canada, 2009

Instructional Technology Institute, Utah State University, 2003, 2004

AWARDS

Research Assistantship for NSF ADVANCE-US
National Science Foundation, 2003-2008

Presidential Fellowship for excellent academic performance and accomplishments
Utah State University, 2000-2001, 2003-2004

Teaching Assistantship
Department of Languages, Philosophy and Speech Communication, Utah State University, 2001-2002

Merit Scholarship for excellent academic performance and accomplishments
Utah State University, 2001-2002