The purpose of this study was to investigate Peer Collaborative Mentoring (PCM) as a professional development model for international graduate teaching assistants at an American university. Data were gathered from interviews and observations of three American peer mentors (Intracultural Peer Mentors/IAPMs), five Chinese Graduate Teaching Assistants (Intercultural Peer Mentors/IEPMs), and 130 undergraduate students who were enrolled in an introductory course in chemistry from the IEPMs. Six categories were identified through an analysis of the data: (1) IAPM socialization; (2) dynamics of PCM; (3) gender; (4) language; (5) phases; and (6) benefits of the PCM process. Data in the categories were analyzed using two forms of triangulation: (1) investigative and (2) data source.

The results of the study indicate that PCM is a developmental process in which participants (IEPMs and IAPMs) move through four phases (Induction, Empowerment through Collaboration, Reduction, and Termination) employing the concepts of reciprocity, mutuality, parity and cultural sensitivity. Providing this type of support system gave the IEPMs and IAPMs an opportunity to develop a learning community through the
PCM process. During the study, the two groups of participants acted as cultural mediators for one another and for the students. The purpose of the mediation was to assist all participants in developing their cross-cultural skills and resolve issues that were germane to the quality of the teaching environment and the professional development of the IEPMs and IAPMs.

The study provides a new mentoring model for teaching faculty that is responsive to professional development and cross-cultural communication skills. The model supports an environment where isolation and dissonance are minimized and collaboration and cultural sensitivity are encouraged.
A Study of Peer Collaborative Mentoring for the Professional Development of International Graduate Teaching Assistants

by

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Typed by researcher Gary M. Kilburg
In Rememberance

Dr. Loso never turned a blind eye to her students and always found a way to bring out the best in everyone. She was one of the most demanding and dedicated teachers that I’ve ever known. She was the best of the best.

Her classroom was an adventure in learning, a journey dedicated to the potential in everyone. She was an architect of souls and a rescuer of minds.

I often think of Dr. Loso and wished that I could have thanked her for the intellectual sunlight that she had given me before she passed away. But I suspect that she knows how grateful I am.

She was an incredible teacher and I'll never forget her. I think what I will remember most about her is the twinkle in her eye when she challenged me. She taught me the importance of climbing the highest mountain, but above all else, she taught me how to build cathedrals.
DEDICATION

"You are the Wind beneath my Wings"

Mom and Dad

I would like to dedicate this journey to my mom and dad. They have given me hope and love and a chance to build a dream. There are not enough words in the universe to tell them how much they mean to me.

Dr. Meg Savige

I'm not really sure how one thanks the sunlight. I've a hunch that gratitude is not what it's all about. Dr. Meg Savige has been my major professor, a friend, a builder of cathedrals, gardener, and a steward of excellence in education. She has always believed in me, even when I had doubts. I am so thankful for her leadership and the candles she left burning.

Dr. Darold Wax

To Dr. Wax, goes my deepest gratitude. He was the lighthouse that helped pave the way. He made my journey so much easier because he is a caring man. He expected the best in me, because he saw the potential. His keen eye and sharp pen always kept me on track. He's a good friend and a man of integrity.
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Finally, Dr. Doyle Slater provided me with the encouragement to carry on in the face of adversity. I will never forget the difference that he has made in my life.
# TABLE OF CONTENTS

I. Introduction

| Providing Professional Development for International Graduate Teaching Assistants at American Universities | 5 |
| Providing Professional Development for International Graduate Teaching Assistants through Peer Collaborative Mentoring | 9 |
| Description of the Mentoring Research Project as a Professional Development Model | 11 |
| Statement of the Problem | 14 |

II. Review of the Literature

| Introduction | 17 |
| Providing Assistance for New IGTAs at American Universities | 29 |
| Providing Professional Development in Higher Education through Mentoring, Peer Assistance and Collaboration | 35 |
| Need for Further Study | 52 |
| Significance of the Study | 55 |
| Research Questions | 56 |
| Summary | 56 |

III. Design and Methodology

| Conceptual Framework | 58 |
| Design and Rationale | 59 |
| Population and Sample | 62 |
| Data Collection | 63 |
| Analysis of Data | 67 |
Summary 70

IV. Analysis of Data 72

Introduction 72

Demographics 74

IAPM Socialization 79

Dynamics of the Peer Collaborative Mentoring Process 86

Gender 93

Language 96

Phases of the Peer Collaborative Mentoring Relationship 107

Benefits of the PCM Process 115

Conclusion 120

V. Summary, Conclusions and Implications 123

Summary of the Study 123

Conclusions 124

Recommendations 132

Implications for Further Research 137

Summary 138

VI. Bibliography 141

VII. Appendix

A Observation Protocol 154

B Interview Protocol, 156

C Teaching Assistant Laboratory Evaluation 167

D Mentor Survey 168
| E | IEPM Perceptions of the Undergraduate Students | 172 |
| F | Helping Undergraduate Students Understand their International Graduate Teaching Assistants | 174 |
| G | Providing Assistance for International Graduate Teaching Assistants at American Universities | 176 |
| H | Limitations/Delimitations and Definitions | 178 |
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hierarchical Mentoring</td>
<td>7</td>
</tr>
<tr>
<td>2. Peer-Egalitarian Mentoring</td>
<td>9</td>
</tr>
<tr>
<td>3. Peer Collaborative Mentoring</td>
<td>9</td>
</tr>
<tr>
<td>4. Peer Collaborative Mentoring Relationships</td>
<td>15</td>
</tr>
<tr>
<td>5. Components of Data Analysis Interactive Model</td>
<td>68</td>
</tr>
<tr>
<td>6. Peer Collaborative Mentoring Interactive Model</td>
<td>73</td>
</tr>
<tr>
<td>7. Three Unbalanced Equations in the Relationship of U. S. Students and International TAs</td>
<td>105</td>
</tr>
<tr>
<td>8. Continuum of Shared Background</td>
<td>106</td>
</tr>
<tr>
<td>9. Peer Collaborative Mentoring Phases</td>
<td>108</td>
</tr>
</tbody>
</table>
International Graduate Teaching Assistants at American Universities

The concern for preparing graduate students to become members of the professoriate is certainly not a new development. Still, according to Nyquist, Abbott and Wolff (1989) it has received too little attention in recent years. As early as 1930, providing TAs with appropriate skills and strategies was an issue for the Dean of the Graduate School at the University of Chicago. Dean Laing raised the following questions before a group of university administrators:

What are we doing in the way of equipping them [graduate students] for their chosen work? Have the departments of the various graduate schools kept their teaching career sufficiently in mind in the organization of their program of studies. Or have they arranged their courses with an eye to the production of research workers only, thinking of the teacher's duties merely as a means of livelihood . . . . And the final question: What sort of college teachers do our Doctors of Philosophy make? (Laing, 1930, p. 51)

These questions raised by Dean Laing in 1930 are still being asked in the 1990's and have yet to be answered.

According to a report by Monaghan (November, 1989), which was featured in The Chronicle of Higher Education, the National Association for the Employment of Teaching Assistants (NAETA) has suggested
that "the training of teaching assistants generally remains in a primitive state of development, but interest is improving" (pp. 18A-19A). It is unfortunate that more colleges and universities do not participate in support programs or training programs for their TAs. They assume that teaching assistants can teach regardless of their experience in the classroom. Unfortunately, not all new TAs, especially new International Graduate Teaching Assistants (IGTAs), are confident in the mastery of their subject area, and they may not be as effective as other TAs because of their inexperience in the laboratory and the classroom. In many cases the only formal guidance and support that the IGTAs receive during their teaching experience takes place when they receive evaluations from their students at the end of the term. As a result, the new IGTAs feel as though they are functioning in a "professional desert" without assistance (Howsam, Corrigan, Denmark and Nash, 1986, p. 12).

In a report by the NAETA (1989), the following evidence was presented which described the current state-of-affairs of TA training programs for the colleges and universities in the United States.

(1) Only 25 per cent of the institutions that use teaching assistants have campus-wide training programs, and only about half of those institutions require participation.
(2) Only half of all academic departments provide training to teaching assistants. Of those, most offer little, and few follow-up with procedures to improve teaching.
(3) By their second year on the job, about two-thirds of the teaching assistants have sole responsibility for classes.
(4) Vast numbers of institutions simply assume teaching assistants can teach, and many faculty handbooks do not even mention that teaching assistants should have an aptitude for or interest in teaching (Monaghan, pp. 18A-19A).

Issues and Concerns about IGTAs at American Universities

"Teaching is probably one of the most culture-sensitive experiences, as anyone who has attempted to teach out of his or her culture well knows" (Bailey, Pialorsi and Zukowski/Faust, 1984, p. viii). At colleges and universities throughout the United States, thousands of instructors who have professorial rank share the problem of teaching outside their culture and speaking in a language that is not native to them. In this type of setting the same instructors can easily fall victim to the ethnocentrism and xenophobia of students and faculty.

International graduate teaching assistants (IGTAs) encounter the same types of problems. As the number of IGTAs have grown, so too have the number of complaints by students, parents, the university and the IGTAs. According to Bailey, Palorsi and Zukowski/Faust, 1984, most of the complaints fall into four categories: (1) language; (2) pedagogy; (3) cultural; and (4) administrative.

Although colleges and universities have sought to support TAs in developing their professional skills in both content and pedagogy, little attention has been given to the special support services required by the IGTAs. According to Monaghan (1989), very few institutions have comprehensive training programs for their IGTAs. Although the institutions recognize the value of the IGTAs and the importance of
quality teaching, few provide the appropriate services which will effectively help the IGTAs become better teachers.

It is apparent that a problem does indeed exist with the IGTA and that it is a problem in need of treatment. It is also important to remember that it is not only the IGTAs who may not know how to teach, how to communicate, and be culturally sensitive. In this study the "foreign TA problem" as defined by Bailey (1984) and Constantinides (1987) is divided into three categories: (1) language; (2) pedagogy; and (3) cultural. A fourth problem area, entitled administration, was added by Nyquist, Abbott, Wulff and Sprague (1991). What follows is a general description of the four categories.

Language

The issue of language has consistently been a problem for a large number of IGTAs at American universities. Complaints about the TAs' inability to pronounce words correctly and limited vocabulary have placed a great deal of strain on the teacher-student relationship and have created barriers to the learning environment (Cox and Cohen, 1983). In many cases, the problem is further compounded by the fact that many of the undergraduate students may be second language learners (vom Saal, 1987).

Pedagogy

The IGTAs may bring a different perspective of how students should be taught and what their responsibilities are to TAs. Most international graduate teaching assistants do not engage their students in an interactive process that is more student centered than teacher
centered, as is the case in a large number American universities (Young, 1991).

**Culture**

Although some authorities believe that language is an issue and is the root of the international teaching assistants' problem, other scholars believe that the real issue is the cultural differences that separate the teaching assistant and the undergraduate student (Bernhardt, 1987). Part of the problem is the expectations each party has of the other. Unfortunately, the expectations are based on a cultural perspective that creates barriers if all parties do not have the same cultural background.

**Administration**

Many colleges and universities throughout the United States are confronted by a growing financial crisis which has all but permanently crippled the IGTA training programs. Because of the lack of funding, the quality and the number of training programs for IGTAs have been reduced or eliminated.

There are also those administrators who do not see the value of training programs for IGTAs. They view the expenditure of money as a waste because the IGTAs should already know how to teach. This attitude exists at the expense of students and the IGTAs.

**Providing Professional Development for IGTAs At American Universities**

There seem to be little doubt among trainers of IGTAs that there is a need for professional development for IGTAs who are beginning
their teaching careers at American universities. Constantinides (1987) and Fisher (1985) found that there is a need to provide comprehensive training programs with an emphasis in language, pedagogy and cross-cultural skills to assist the international teaching assistants when they first come to the United States. Darling (1987) suggests that part of the professional development of IGTAs is the opportunity to interact with colleagues when they first begin teaching. Grey and Grey (1985) believe that it is especially important for new instructors to have a support system which provides encouragement, guidance and advocacy from experienced teachers.

Support Systems for Professional Development

Currently, mentoring, collaboration, and peer assistance are seen as strong support systems for the IGTAs in American colleges and universities. These support systems are considered to be among the most important professional responsibilities that colleges and universities have to their faculty, including the IGTAs (Sprague and Nyquist, 1989; Smith and Scott, 1990).

While interest in mentoring, collaboration and peer assistance appears to be a recent phenomenon, the concept of providing support, assistance and a nurturing environment is really quite old. Most of the support systems today, including collaboration and peer assistance, rely heavily on the concept of mentoring as a foundation for their programs.

In Greek mythology the term "mentor" denoted an individual who had a supporting role in another person's life. Odysseus entrusted his property and son, Telemachus, to an old man called, Mentor. Mentor was responsible for developing the son professionally,
personally and politically so that he might be assimilated into the existing hierarchy one day. Historically, the supportive and nurturing relationship is a recurrent theme in providing a backdrop for much of the research on support services in the modern world of industry, business, science and education.

The concept of mentoring involves two models: hierarchical and peer-egalitarian. Although hierarchical mentoring is the model most often noted by researchers, it is the peer-egalitarian model that will be used in this study. The hierarchical model is representative of a primary mentoring model, holding that the mentor is more parent-like and more powerful in directing the protege. The hierarchical model is based on a patron relationship in which a more experienced person (mentor) and a less experienced person (protege) work towards the protege's professional growth. There is relatively little parity, for the mentor is in a position of authority while the protege is the subordinate member of the relationship. Mentors serve as guides, benefactors, sponsors, role models and coaches (Shapiro, Haseltine and Rowe, 1978; Phillips-Jones, 1982). In the model, the mentor has higher status than the students, and communication is one way.

Figure 1. Hierarchical Mentoring
Levinson et al. (1978) describes the hierarchical mentoring as a subordinate relationship in which:

[A] person of greater seniority and experience who is characteristically a half-generation older than the protege. A mentor represents a mixture of parent and peer; [mentor] must be both and not purely either one. If [s/he] is entirely a peer, [s/he] cannot represent the advanced level toward which the younger person is striving. (p. 97-99)

Levinson et al. (1978) sees the mentoring process as very broad and informal. On the other hand, Zey (1984) believes in a more formal approach to the mentoring role:

The mentor is seen as an individual who has more experience and that supports the protege through counseling, teaching and protection for the purpose of assisting in that person's professional development. (p. 7)

Reohr (1981) defines the hierarchical mentoring relationship as one in which the mentor supports the protege, but there is a lack of mutuality and equality. The vertical relationship of the hierarchical model can inhibit the professional development of the protege, because the protege is the subordinate member of the relationship.

An alternative to hierarchical mentoring is the peer-egalitarian mentoring model (See Figure 2), which is considered to be secondary mentoring. Although this relationship is considered to be equal, most proteges consider themselves to be subordinate at the beginning of the relationship because of their lack of teaching experience. Additional characteristics which are important to this form of mentoring include mutual interest, friendship and empathy (Hall and Sandler, 1983; Kram, 1985). Figure 2 represents the model of peer-egalitarian mentoring:
Providing Professional Development for International Graduate Teaching Assistants through Peer Collaborative Mentoring

Peer collaborative mentoring (PCM) is similar to peer-egalitarian mentoring in that it has the elements of friendship, empathy and mutual interest along with the characteristics of peer assistance and collaboration. The PCM process (See Figure 3) relies heavily on mutuality, parity and reciprocity as its principle ingredients. In this relationship, no one is subordinate; everyone is equal. The initials PM in figure 3 represents the term, "peer mentor."

Peer collaborative mentoring is best described through a number of definitions which outline the procedure. The concept of collaboration, like mentoring, is defined in a variety of ways. Appley and Winder (1977) view collaboration as a relational system of individuals within a group. At the heart of this system are three elements: (1) mutual aspirations and a common purpose, (2) trust and
fairness, and (3) interaction which is shared. Phelps and Damon (1989) see collaboration as a way "in which a pair of novices work together to solve tasks that neither could do previously" (p. 639). The notions of common interest and mutual benefit are clearly understood in this type of relationship.

Crandall's (1977) definition of collaboration suggests that it is;

A process of working together to solve problems and act on the solutions under circumstances where all parties believe that a mutually agreeable solution is possible and that the quality of its implementation, as well as the level of satisfaction they will experience, will be improved by virtue of engaging in the process. (p. 348)

Crandall's idea of collaboration requires minimizing power and influence on all participants involved in the process. In other words, Crandall subscribes to the notion that power is shared among the principal actors, and no one may gain an advantage by virtue of greater authority.

In conclusion, the following definition of PCM incorporates a number of characteristics from the definitions cited. There are, however, three additional elements which are seen as essential to the peer collaborative mentoring concept: (1) parity; (2) reciprocal interaction; and (3) shared interest or mutuality. These three elements combined with selected parts of Anderson's definition provide the following definitional framework for this study of PCM:

A nurturing process in which both parties (a more experienced and skilled person and a less experienced person) serve as equal partners, role models, teachers, sponsors, encouragers,
counselors, friends and professionally supporting one other. Both parties act as resources for one another and help each other accomplish professional and/or personal goals. Mentoring functions are carried out within the context of an ongoing caring relationship.

It is important to remember that this definition not only provides for a relationship which is equal in status for both participants, regardless of experience, but it also involves mutuality and reciprocity as essential ingredients to the PCM process. It is this process that will be employed in this study.

**Description of the Mentoring Research Project as a Professional Development Model**

The study of the PCM process began with the Mentoring Research Project (MRP) at Oregon State University and its use of Peer Collaborative Mentoring as a professional development tool for international graduate teaching assistants. The intent of the MRP was to design and implement a PCM program for five Chinese teaching assistants which would provide professional assistance and collegial support. American graduate students who were peer mentors to the Chinese TAs would be called "Intracultural Peer Mentors" (IAPMs) and the Chinese teaching assistants would be called "Intercultural Peer Mentors" (IEPMs). The following description of the Mentoring Research Project was taken from the Mentoring Research Project proposal (1990) which was submitted to the Department of Chemistry.

**Project Background**

The Mentoring Research Project was an outgrowth of a request from the Graduate School to provide support services for novice
international graduate teaching assistants at Oregon State University. Dr. Meg French-Savige, Gary Kilburg and Karla McMechan recommended in a proposal entitled, "Preparing the Professoriate of Tomorrow" that a mentoring program be established at the university to assist novice IGTAs. The College of Education agreed to the request and established a pilot mentoring research project in the Fall and Winter of 1990-1991.

The project involved mentoring five international graduate teaching assistants from the Chemistry Department. The mentoring process that would be utilized throughout the project would involve the use of collaboration and peer assistance in a cross-cultural environment.

The description that follows provides additional insight about the Mentoring Research Project and is a direct quote from the proposal "Preparing the Professoriate of Tomorrow" that was submitted to the Graduate School.

**Project Goals and Objectives**

The Mentoring Research Project goals include:

(1) Provide the highest quality academic experience possible to OSU's graduate and undergraduate students.

(2) Assure that those who will be the professoriate of tomorrow are prepared optimally to assume their roles as educators and campus/community leaders.

(3) Encourage graduate students to develop, through innovative approaches to academic preparation, an increased sensitivity to and appreciation for, the personal and professional attributes needed to be successful in a culturally and ethnically diverse environment.
Program Design

The Mentoring Research Project was divided into two phases. Phase I focused on research and development of the model for the program. Phase II focused on implementing the peer collaborative mentoring model with the International Graduate Teaching Assistants in the Department of Chemistry and is the phase that is described below. Steps related to the current study included:

**Phase II**

Meet with prospective IEPMs and appropriate faculty in Department of Chemistry to obtain their support and involvement in the pilot program.

Match IEPM with IAPMs.

Clarify IEPMs needs and expectations.

Implement PCM.

Obtain feedback from all program participants regarding the programs strengths and areas for revision.

Identify and disseminate project outcomes.
   - make conference presentations.
   - prepare articles for submission.
   - prepare final report.

Submit a final report to the Department of Chemistry which summarizes all outcomes and makes recommendations.

Program Benefits

It was expected that the program would have the following benefits:

(1) HIED 521/621 The IAPMs should gain an awareness and understanding of the ability to interact with people from diverse ethnic and cultural backgrounds.
(2) Client IEPMs should have a collegial and non-judgmental forum from which to explore issues and concerns that affect their personal and professional development.
(3) The Department of Chemistry and Postsecondary and Technological Education should gain experience in intra-organizational collaboration and innovative methods to expand instructional support services.
(4) The insularity of the IEPMs should be reduced.

Statement of Problem

The Peer Collaborative Mentoring (PCM) process is designed as a professional development model for new IEPMs. The PCM process involves the participants in a relationship that is reciprocal, mutually beneficial and is designed to treat all participants as equals. Through this process of support, the new IEPMs will be provided with the opportunity to increase their technical expertise as teachers, as well as to establish collegial relationships which model the PCM process.

The focus for this study is the Mentoring Research Project at Oregon State University and the implementation of a mentoring concept entitled Peer Collaborative Mentoring (PCM). Peer Collaborative Mentoring is designed to assist and nurture IEPMs while working in a cross-cultural setting at an American university. The IEPMs had never taught in an American university but they had taught in their homeland.

The study investigates two questions:
(1) What were the reactions and interactions that occurred during the Peer Collaborative Mentoring process?
(2) Why did these reactions and interactions occur?
These questions not only investigate the relationship of the IEPMs and the PCM process but also investigate the relationship with the IAPMs and students. Figure 4 is an illustration of the PCM process and the reactions and interaction that takes place between participants.

Figure 4. Peer Collaborative Mentoring Relationships
CHAPTER II

Review of the Literature

U.S. universities have long employed graduate students as teaching assistants to work as part-time instructors, test graders, discussion leaders, and laboratory session supervisors in classes for undergraduate students. In the past decade an increasing percentage of these teaching assistants (TAs) have been international students who are assumed to be competent in their disciplines, but who have, to varying degrees, less than perfect control of English, the medium of instruction. Furthermore, these non-native speaking (NNS) TAs may lack a clear understanding of their roles within the American educational system. Thus, both linguistic and cultural differences contribute to the difficulties faced by foreign TAs. (Bailey, 1984, p. 3)

The cultural differences and communication problems that are engendered by the situation noted above are collectively called the "foreign TA problem" (Bailey, 1984). This chapter will address these problems as well as other issues that confront international graduate teaching assistants (IGTAs), and summarizes the literature on mentoring, collaboration and peer assistance in Higher Education. The research questions that are identified in Chapter I give direction to the issues presented in this study and provide a possible method for assisting new IGTAs. The review proceeds as follows: (1) Introduction; (2) Providing Assistance for New IGTAs; (3) Providing Professional Development in Higher Education through Mentoring, Collaboration, and Peer Assistance; (4) Need for Further Study; (5) Significance of the Study; (6) Research Questions; and (7) Summary.
Introduction

Preparing the professoriate of tomorrow (IEPMs) is one of Higher Education's greatest challenges in the 1990's. Not only do we need to attract a large number of scholars to the teaching ranks in Higher Education, we must also prepare them for teaching in a culturally diverse environment.

Within the college and university system, the IEPMs are recognized as important members of the teaching faculty. They are typically the brightest and most promising scholars at their native universities, and they bring a different perspective of the world to the American university. Their presence provides the university with an opportunity to broaden the vision of the undergraduates they teach and increase their knowledge and skills through contact with another cultural and educational system. (Bailey, Pialorsi, Zukowski/Faust, 1984)

At most major universities in the United States teaching assistants may be responsible for the instruction of between twenty-five and thirty-eight per cent of the undergraduate population. Some universities, have almost as many teaching assistants as faculty members. With such a high number of teaching assistants responsible for teaching a large portion of the undergraduate population, it could therefore seem reasonable to expect that the TAs would be exposed to training programs. These training programs would increase the IGTAs' ability to effectively teach a very diverse student population, apply recent developments in learning theory, and adopt active learning strategies and techniques to foster problem solving.

Context for the IGTA Problem

Currently, the context for the "foreign TA problem" centers on those issues and concerns that have been previously identified. The following list
briefly identifies those issues and concerns: (1) language; (2) pedagogy; (3) culture; and (4) Administration (Bialey, 1984; Diamond and Grey, 1987).

(1) Language

According to an International Issues Survey from American students at the University of Minnesota, foreign TAs were rated "much worse" or "somewhat worse" than American TAs. The percentages reflect the degree to which the foreign TAs are worse than American TAs on: (1) ability to communicate with students (77.3%); (2) familiarity with university policies (26.4%); and (3) overall teaching ability (47.4%). In response to the question, "Do you think having a foreign TA has helped, hurt or had no effect on the quality of the course taken," 43.5% responded "harmed," 47.8% said "no effect," but only 8.8% responded "helped." Moreover, 80.7% of the respondents reported problems understanding the foreign TA's English (Mestenhauser et al. 1980, p. 3).

It is unfortunate that the IGTAs were not surveyed in the preceding study. They may very well have contributed additional information which would have suggested that both the IGTAs and the American students are responsible for communication in the classroom. They might also assume that educational practices which have been demonstrated to be "successful" among learners in one culture automatically will "work" with learners from a different culture (Farrell, 1987, p. 4-5).

Jacobs and Friedman (1988) characterize the language problem in the following way:
Students complain that foreign instructors [IGTAs] do not have adequate control over productive and receptive oral skills. Mispronunciation of sounds, misplacement of stress, and faulty intonation patterns may contribute to student noncomprehension. In addition, students cite the inability of some instructors [IGTAs] to understand their oral questions and comments. These basic language related complaints are believed to create major interference that may hinder the students learning process. (p. 552)

Dr. vom Saal (1987) supports Jacobs and Freidmans position and believes the problems faced by the IGTAs may be further compounded by the fact that undergraduates are also similar to second language learners, like their IGTAs. That is, that many of the students have not had a great deal of serious exposure to the language of the discipline. Add to this problem that IGTAs are communicating in a language that is unfamiliar to them, and the problem of communication is complicated even more.

One University of California student described the problem in the following way:

The system will never be any better than the TAs that comprise it. Some TAs have evoked criticism for not speaking English well enough to communicate with students in class. Obviously if this communication does not occur, the students are being hurt rather than assisted by the presence of the TA in the classroom. (Lurie, 1981, p.4)

(2) Pedagogy

Further, the IGTAs may not be aware of the various teaching strategies and techniques. Janet Constantinides (1987) has i
dentified pedagogical skills as an issue of equal importance to language and culture. She has identified three important components of pedagogy as issues that need to be understood by the international teaching assistant:

(1) The philosophy of education of the institution and culture;
(2) expectations of the educational institution; and (3) what is expected of them in their specific discipline. Bailey, Pialorsi and Zukowski/Faust (1984) agree with Constantinides and suggest the importance of understanding the institutional expectations of a teaching faculty and the value of dialogue between students and professor. They also believe that it would be in the best interests of the IGTAs to identify a course model within their discipline which will provide them with a working plan of what it is like to teach in the American classroom. With this formal plan of attack, IGTAs may find some comfort in working with American undergraduates and within an educational system that is foreign to them.

(3) Culture

Although there are those who believe that language is really the root of the problem for the IGTAs, Bernhardt (1987) maintains that language is not necessarily the root of the problem. She suggests that even native-English-speaking, non-Anglo teaching assistants (i.e., Jamaicans) have numerous complaints brought against them. Bernhardt believes that the problem is really one of cultural differences (e.g. values, education, cultural background) between the IGTAs and the undergraduate population. As a result of these differences, the IGTAs and their undergraduate students enter the classroom with
different expectations and the potential for conflict. With the presence of IGTAs there are new challenges as well as new opportunities for the American university and its students. The first major challenge is that the American perception and understanding of the world will be challenged by the contrasting orientations of the IGTAs. The second major challenge is that the cultural differences between the American students and foreign graduate students will complicate communication. Moreover, these IGTAs will carry with them strong cultural identities as well as certain critical perspectives about their world. In spite of the strong pressures to adopt American values, there will be resistance to becoming "Americanized" (Zongren, 1984).

In addition to the aforementioned problems (e.g. cultural differences and perspectives), the IGTAs must also cope with the ambiguous position they hold as a teaching assistant in an American university (Fisher, 1985). Many of the IGTAs have come from countries where there are no teaching assistantships and what little teaching has been done has been in the laboratory. As an American university teaching assistant, the new IGTAs are thrust into an academic environment that is foreign to them. They are now a teacher and a student at the same time and are responsible for commanding the attention of the undergraduate population that they are teaching. Barnhardt (1987) attributes part of the IGTAs problem to the expectations that the IGTAs have of the American undergraduate classroom and how their students should act. Research by Bailey, Palorsi, Zukowski/Faust (1984) also identify the American undergraduate as a source that contributes to the IGTAs problem by
entering into the classroom with negative expectations about the IGTAs and what they can't do for them.

(4) Administrative

In a recent study by Burkett and Dion (1991), graduate teaching assistants were described as convenient cheap labor, and failure to train these TA's resulted in less than adequate instructional quality. Part of the problem is that, in the absence of strong administrative support, many of the proponents of TA training programs retreat from the struggle. This is especially true if the training program is not a high priority.

Goodwin and Nacht (1986) believe that it is essential that higher education meet its responsibility to assist new IGTAs. They think part of the fault lies with administrators who make the decisions about the training of IGTAs and rarely place a high priority on the problems affecting the IGTAs. Their assistance offers little, if anything, for the special needs of the IGTAs.

To compound the problem that was identified previously, Diamond and Grey (1987) have shown that many of the teaching assignments are in required courses which many undergraduate students traditionally resist. Moreover, 20 percent of all the TAs' assignments are outside of their disciplines, and this occurs more often for IGTAs than American TAs. The reason that more IGTAs are faced with this problem is because of their increasing numbers in the hard sciences.
Issues and Concerns in Preparing International Graduate Teaching Assistants to Teach in American Universities

Historically, IGTAs teaching at American universities have had four critics: (1) the university, (2) students, (3) parents, and (4) the IGTAs themselves.

The Universities' Perspective

It is unfortunate that on the one hand the IGTAs provide the university with a vital teaching tool and relief for the overcrowded classrooms, while on the other hand they are affected by educational barriers which may disable them by limiting their effectiveness in the classroom setting (Bailey, Pialorsi and Zukowski/Faust, 1984).

The assistance provided by the university in many cases only meets the needs of the general TA population and offers little if anything for the special needs of the IGTAs.

The Students and Parents Perspective

Historically, most of the complaints made by students and parents concerning IGTAs fall into three categories: language, instructional, and cultural.

The U.S. students and parents seem to complain the most about the IGTAs inability to speak English clearly. Jacobs and Friedman (1988) have noted that:

Students complain that foreign instructors do not have adequate control over productive and receptive oral skills. Mispronunciation of sounds, misplacement of stress, and faulty intonation patterns may contribute to student noncomprehension. In addition, students cite the inability of some instructors to understand their oral questions and comments. These basic language-related...
complaints are believed to create major interference that may hinder the student learning process.

The second and third categories of complaints are related. IGTA's presentation skills are often cited as problematic, for example, introducing and organizing ideas, failing to present information clearly and coherently. The third category of complaints, cultural, manifests itself in various ways that may create an unpleasant atmosphere. Often an IGTA whose educational training occurs in a culture that views the teacher as very highly respected may have difficulty adjusting to the informal environment of the American universities. (Jacobs and Friedman, 1988, p. 552)

University administrators tend to react when student complaints are followed by complaints from parents. A typical example of parental concern regarding IGTAs is provided by a letter to the chancellor of UCLA:

It has been brought to my attention that many foreign students are employed as Teaching Assistants (TAs) at UCLA, many of whom are virtually inarticulate in English, and worse than effective in communicating with the students. Not only are they of no help, but cause confusion in the minds of those they are trying to teach. You and I well know that communication at best is often difficult, even among natives of the same language, especially as it pertains to abstract ideas such as occur in philosophy, psychology, and the general subjects of the humanities. As a tax-paying Californian, I resent supporting a policy which dilutes the teaching process by such an obvious abrogation of common sense; putting square pegs in round holes was never my idea of efficiency. (Bailey, Pialorsi and Zukowski/Faust, 1984, p. 5)

As the letter indicates, the IGTA problem can be an emotional one, depending upon the situation and the effect on the participants. But it is still
The International Graduate Teaching Assistants' Perspective

A study of 1000 graduate teaching assistants at Syracuse University revealed that two-thirds of the TAs lacked a number of communication and pedagogical skills. The IGTAs, especially, had difficulty in those areas (Cashell, 1977). Current research by Diamond and Grey (1987) and Constantinides (1987) clearly indicates that the IGTA continues to be faced with essentially the same problems identified by Cashell.

Most IGTAs feel that the biggest problem they face is with their ability to communicate with the American student. Part of the problem for many IGTAs is that their pronunciation skills are good enough when well defined but are less than adequate in discussions where the subject is less familiar. In a number of cases, IGTAs feel that they cannot rely on technical language to communicate with their students. They also found that it was very important to pay attention to the language level difference of their students (Faust, 1984).

Issues and Concerns of Chinese Graduate Students at American Universities

Because this study involves graduate teaching assistants from the People's Republic of China, an understanding of their language, culture and educational background would provide a clearer picture of the Chinese students and how they function at an American university.

Language

Van Nierssen and Riggenbach (1984) contend that language is one of the main concerns that most of the Chinese students have when they arrive
in the United States. They are primarily concerned with fluency in written
and spoken English, syntax, and lack of a strong English vocabulary. For
Chinese students, a high degree of grammatical accuracy appears to be less
important than appropriate word choice and a minimal level of
pronunciation.

In a culture where loss of face is taken very
seriously, and where accuracy of detail is a
strong educational tradition, one can see how
the two can combine to inhibit students, prevent
them from feeling comfortable in expressing their
ideas and thus inhibit fluency (pp.8-9).

Zongren (1984) identifies other areas that are of concern for the Chinese
student in America, involving the processing of information so that
information can be easily understood. For example, American professors
contribute to the communication problem because they tend to speak very
fast for the foreign student. When this occurs, words become difficult to
understand and therefore difficult to translate. Chinese students feel it would
be helpful if the American professors would take more time after class to
clarify what was said during class and to speak more clearly. Zongren suggests
that Chinese students also felt that responding to questions from some
students was difficult, when they didn't have command of the English
language and the subject. This was especially difficult when several students
were asking questions at the same time and expecting answers.

An area of concern faced by some Chinese students involves lack of self
confidence and loss of face (e.g. as identified in the quote on page 12). In a
culture where loss of face is taken very seriously and where accuracy of detail
is a strong educational tradition, the two can combine to inhibit students.
The mastery of content and language is a strong tradition in the Chinese
educational system and is based in part on the Confusian educational tradition (Huany, 1984).

**Culture**

The Chinese are accustomed to the concept of lasting friendships, and at first are disturbed by what seems to be false friendliness on the part of the Americans (Zongren, 1984). Chinese students mention that Americans appear to be warm and interested in cultivating friendships at the outset, but that they are just being polite in the American way. The American way is considered to be very superficial by Chinese standards. One Chinese student commented, "At the beginning you think that Americans are friendly people, yet later you find out that politeness is just a matter of routine" (Wilson and Fung, 1991, p. 2).

Another perception is that there is a tendency for Americans to be viewed as aggressive which is contrary to the Chinese aversion to conflict and preference for harmony and modesty (Zongren, 1984; Young 1990). When one Chinese student was asked about this contrast he said that the Chinese are as competitive as the Americans, but they are not as aggressive. Another student stated that "Chinese have a tendency to seek the deep things and are not easily self-satisfied." They are "perfectionists," and they do not "show-off" like the Americans (Wilson and Fung, 1991, p. 4).

The Chinese culture, with its emphasis on family relationships and continuity, seems to be more effective in satisfying the need for intimacy than Western cultures with their emphasis on independence and individualism. One Chinese scholar suggested that once a friendship is established among Chinese, there is a closer, more solid relationship than the typical American one. Since there is a lot of distrust within Chinese society, people usually
build a small gathering of friends on whom they depend. Zongren (1984) feels that Chinese students are very lonely in America, because this small gathering of friends is lacking.

In a review of research on Chinese Americans, Sue and Morishima (1982) come to the conclusion that the traditional Chinese place a great deal of emphasis on the value of the group, rather than the individual, as is the case in America. They noted that Chinese are less likely to be very aggressive and rebellious as individuals and direct their efforts and talents to the potential of the group, as well as toward assisting others.

**Academic Setting**

In the Chinese educational system, according to Zongren (1984), professors are revered as experts and are not to be questioned. On the other hand, it is more acceptable for American university students to openly debate and question their professors (Young, 1990). This casual attitude toward professors in the United States is not an acceptable practice to most Chinese students because it openly challenges an authority figure and shows a lack of respect.

Rote learning is also an important element in the Asian system of higher education. Students in China are passive in the classroom; they listen and ingest the lecture information delivered by the professor without the opportunity to question the professor. Chinese students are surprised at the behaviors that American students may exhibit in the classroom. For example, they view it disrespectful for students to place their feet on top of the desks, eat and drink in the classroom, read newspapers and books, sleep, or carry on conversations while the professor is trying to lecture. The Chinese consider education a privilege; one earns the right to attend a
university and should therefore honor the educational system and the professors.

In summary, differences exist between the Chinese and American cultures that are important to remember for the Chinese graduate students attending American colleges and universities. The differences can create barriers which inhibit the educational environment for the Chinese graduate teaching assistants and their students. The result may be a reduction in the quality of education for both IGTAs and their students.

Providing Assistance for New IGTAs at American Universities

Language Programs for IGTAs

Currently, fourteen states have state mandated laws that require oral English language proficiency for IGTAs. Colleges and universities in other states have also passed regulations that mandate testing of IGTAs. They normally require them to take either the Test of Spoken English (TSE) or the Speaking Proficiency English Assessment Kit (SPEAK) (Stanfield and Ballard, 1984).

These tests require the IGTAs to read aloud, describe pictures, tell a story from a series of pictures, develop complete sentences, present a schedule or syllabus, and either express an opinion about a controversial topic or describe a familiar object in a language laboratory setting. The total score reflects the overall language ability of the IGTAs (Bailey, Pialorsi and Zukowski/Faust, 1984).

Performance standards for the SPEAK test are outlined by Bailey, Pialorsi and Zukowski/Faust (1984):
0-90  Overall comprehensibility too low in even the simplest type of speech.

100-140  Generally not comprehensible due to frequent pauses and/or rephrasing, pronunciation errors, limited grasp of vocabulary, and lack of grammatical control.

150-190  Generally comprehensible but with frequent errors in pronunciation, grammar, choice of vocabulary items, and with some pauses or rephrasing.

200-240  Generally comprehensible with some errors in pronunciation, grammar, choice of vocabulary items, or with pauses or occasional rephrasing.

250-300  Completely comprehensible in normal speech, with occasional grammatical or pronunciation errors in very colloquial phrases (p. 104).

Guidelines provided by the National Association for Foreign Student Affairs (1989) are representative of those most colleges and universities use to make their TA assignments:

<table>
<thead>
<tr>
<th>SPEAK Score</th>
<th>Suggested Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>Any assignment.</td>
</tr>
<tr>
<td>230-240</td>
<td>Any assignment except lecture.</td>
</tr>
<tr>
<td>200-220</td>
<td>Any assignment except lecture, Laboratory, recitation, P.E. activity classes, or any activity requiring substantial student-teacher interaction.</td>
</tr>
<tr>
<td>150-190</td>
<td>Only assignments involving minimal student-teacher interaction.</td>
</tr>
</tbody>
</table>
150 or Less

Only assignments that do not require that students depend on TAs for important course-related information (i.e. grading, preparation of lab materials, etc.).

Beyond the TSE and the SPEAK tests, a number of colleges and universities in the United States, such as the University of New Mexico and the University of Delaware, have developed collaborative training programs for their IGTAs. These programs involve the use of undergraduate students as observers in the classes that are being taught by the IGTAs. After the observation, the students meet with the IGTAs, several faculty members and experienced TAs in their discipline to discuss the observation and any other issues of concern. These programs provide the IGTAs with a sounding board and feedback mechanism to improve communication as well as an opportunity for the undergraduate population to become actively involved in the educational process.

The IGTAs must also be made aware of the difference in educational philosophy and learning styles when comparing the American educational system with their own. Many of the IGTAs may come from educational systems that place a high priority on memorization, whereas the American educational system places a great emphasis on higher-level cognitive skills (Constantinides 1987, p. 5):

If the foreign teaching assistants are made aware of major differences between the American undergraduates and themselves as undergraduates, then they will have less difficulty communicating effectively in a classroom. If they employ their own educational backgrounds to find appropriate teaching behaviors and styles, then the American students will find the methods unfamiliar, uncomfortable, and unhelpful, causing complaints.
Many colleges and universities, including Oregon State University, provide ESL programs for their IGTAs, which usually include the following components:

(1) At least half of the total time spent on pronunciation, conversation, and communication competence as it relates to the role that IGTAs will play in a department.

(2) The use of presentation skills and how that relates to the language component.

(3) The use of undergraduates as tutors for the new IGTAs and as evaluators in microteaching laboratories.

**Instructional Programs for IGTAs**

Instructional programs provide IGTAs with an opportunity to develop strategies and techniques that are appropriate for use in American university classrooms and laboratories. The instructional phase may provide the IGTAs with a series of workshops that they can attend throughout the academic year.

Coursework in instructional methodology may also be required of the IGTAs as a part of their professional training. Most of these courses vary in length from one term to one academic year. The courses will usually involve the development of discussion, lecture, question and answer, testing and evaluation skills. The IGTAs have the opportunity to make presentations in a videotaped microteaching lab and are evaluated on their pedagogy and language. (Nyquist, Abbott, Wulff and Sprague, 1991)
Cross-Cultural Programs for IGTAs

The cross-cultural component of IGTA training is designed to provide the new IGTAs with the skills to function in the host institution, without losing their identity.

Usually the new IGTAs will be asked to make a short presentation at the universities' orientation program. The presentation usually includes pronouncing their names, identifying their country and providing background on their educational system (Bailey, Pialorsi, Zukowski/Faust, 1984).

Althen (1991) believes that the IGTAs should be equipped with information that identifies cultural barriers impeding the communication process between the TA and the student.

They will realize, for example, how differences in nonverbal communication habits can give rise to the notion that a foreigner is excessively shy, formal, deferential, authoritarian, or emotional. They understand the frame of mind of people raised in a culture that stresses individualism more than the collective, and deductive thought more than inductive. They understand the local conception of a 'good teacher'; local ideas about teacher-student and student-student relationships; plagiarism as it relates to the notion of individual ownership of intellectual products; and variations in teaching and learning styles. (p. 352)

A comprehensive IGTAs program will also include information on understanding U.S. cultures and offer a systematic comparison of the U.S. cultures and their own. The IGTAs are able to diagnose cultural barriers in communicating with their students and improve the classroom environment.
Finally, a comprehensive training program will also be aware of people's (e.g. students' and parents') proclivity to misinterpret and to judge negatively those values, attitudes, and behaviors that differ from their own.

**Administrative Support for IGTAs**

As teachers of teachers, graduate institutions are in a pivotal position to influence the training of new university professors and TAs through induction programs. The graduate institutions role in the preparation of college and university professors and IGTAs is particularly crucial during the 1990's with student enrollments increasing. It is estimated that 500,000 new professors, which would include faculty from the international community, will be needed by the year 2014 to teach the increased student population. These figures are a reflection of the number of professors who will retire within the next ten to fifteen years and the children of the post-World War II generation who will be coming of age (Nyquist, Abbot, Wulff, 1989). Unfortunately, many graduate facilities have operated on the assumption that the process of becoming a member of the professoriate requires exposure to research and theory with little training in teaching (Heiss, 1989).

The challenge of the 1990's is to take seriously the charge that the training of teaching assistants must be improved for the benefit of all concerned. Wikening (1990) suggests that it is important to view the teaching assistant as an "apprenticeship for the professoriate." The apprenticeship model, she said, "addresses a basic need of teaching assistants: to believe that their teaching assignments are introducing them to academe 'trade secrets.' " In addition, she suggests that most students will respect professors-in-training more than they will "cheap labor" (p. 14).
Providing Professional Development in Higher Education through Mentoring, Peer Assistance and Collaboration

One way in which institutions are assisting junior faculty and IGTAs is through creating a collegial environment that offers mentoring, collaboration and peer assistance services by senior faculty and experienced graduate teaching assistants (Diehl and Simson, 1989, Puccio, 1986, Xu and Newman, 1987).

Mentoring and Adult Development in Higher Education

Levinson et al. (1978) have been the catalyst for much of the research in mentoring and adult development today. Their interest in guiding and advising those with less experience in an organization provides the impetus for the collegial relationships at the collegiate level.

Traditionally, mentor relationships have not focused on new TAs, but rather on developing the new instructors' professional skill level in and out of the classroom. Research by Hill, Bahnium and Dobos (1989) suggests that the support behavior can also be accomplished through "reciprocal peer or collegial support" (p. 16). Research by the Woodlands Group (1980), Kram and Isabell (1985), and Shapiro, Haseltine and Rowe (1978) conclude that reciprocity in the mentoring relationship is important. Pearson and Trent (1986) believe that it is this type of psychological support that enhances the individual's chances of being successful. Such mentoring and collegial support groups for new faculty are a legitimate and defensible element of staff development programs and provide the new faculty with an opportunity to grow, along with the opportunity to become more effective instructors for their students.
Conditions Necessary for Mentoring to Take Place.

Throughout the mentoring relationships, authorities have identified conditions that they feel are necessary in order for effective mentoring to take place for new faculty in academia. The conditions that contribute to a successful mentoring program include:

(1) Voluntary Participation.

Most researchers advise that participation in mentoring programs be voluntary ((Kram, 1986; Phillips-Jones, 1983; Tanner and Ebers, 1985; McKenna, 1988).

(2) Maximized Personal Freedom.

Mentoring programs should minimize the rules and maximize the mentor's personal freedom to work with the protege. It is an opportunity to creating a network of possibilities for the new teacher. Finally, both parties are stakeholders in the relationship and should be responsible for negotiating goals and expectations (Farren, 1984).

(3) Matched Teaching Styles.

Mentoring relationships form best when both mentor and protege have the same teaching style and educational philosophy (Parkey, 1988).

(4) Access to Mentor and Protege.

The mentor and the protege need to have access to each other. If one fails to participate actively in the mentoring relationship, the quality of the mentoring relationship is diminished and may be jeopardized (Odell, 1989).
(5) Collaboration between Participants.

One of the conditions necessary for developing a strong and effective mentor/protege relationship is the use of collaboration, even though one instructor is senior. The relationship of colleagues is one of reciprocity and parity with each person contributing to the effectiveness of the relationship (Reohr, 1981).

Additional conditions were recommended by Clawson (1980) who concluded from his findings that an effective mentoring relationship should meet the following conditions: (1) interaction, (2) trust, (3) openness with information, (4) informality, (5) mutuality, (6) respect, and (7) roles that are complimentary. Only then would the purpose of mentoring be served.

Potential Detriments to the Mentoring Process

As with any form of mentoring, there can be detrimental effects. The following is a list of potential drawbacks in the mentoring relationship:

(1) Power.

The mentor might lose power by demonstrating poor teaching habits and in turn lose his/her effectiveness with the protege (Daloz, 1986). The mentor might be exploitive, egocentric, or too stifling and protective of the protege (Levinson et al. 1978). Mentors may also want to exploit the relationship with the protege (Fury, 1979).

(2) Immaturity.

A lack of maturity on the part of at least one of the participants may cause a breakdown in communication and in the potential of the relationship (Weber, 1980).
(3) Limited Vision.

Having only one mentor may limit the protege's perspective of what effective teaching looks like (Fury, 1979).

(4) Dependency.

The protege may become too dependent upon the mentor. The mentor, on the other hand, may need encouragement from others to feel good about himself or herself. Their method of survival may come at the expense of the protege (Weber, 1980; Daloz, 1986).

Although the above is certainly not a complete list of potential detriments to the mentoring process, it does provide a sampling that accurately describes characteristics that should be avoided.

Benefits of Mentoring

Most of the research has focused on the protege's perceptions of the mentoring relationship, with particular attention to the benefits to the protege. Phillips-Jones (1983) has identified the numerous benefits for the protege: the mentors provide effective models, encouragement, opportunities and resources, exposure and viability, new and improved skills and knowledge, a bridge to maturity, and advice on career goals.

Adult developmental theory, however, suggests that there are also benefits for the mentor. The mentor benefits in the following ways: rewards for spotting and developing new talent, collegiality, problem solving, and repaying past debts. The most important ingredient, according to Phillips-Jones, is the reciprocity that occurs between the mentor and protege, which is a major factor in establishing a successful relationship.
Hunt (1990) suggests that mentoring also yields a number of other benefits. Mentors may extend their power base, exercise their creativity, improve knowledge and skills, and pass on their accumulated knowledge, in training and advising successors.

In a study on the benefits of mentoring on academic administrators and faculty in Florida, Queralt (1982) found that:

Academics with mentors showed higher levels of productivity than academics without mentors where productivity was measured in terms of: number of competitive grants of $500,000 or more received, number of competitive grants of between $200,000 and $499,000, and number of years of national or international leadership. (pp.11-14)

Queralt also found that those administrators who had had mentors showed significantly higher levels of career development (i.e. professional presentations and attending professional conferences and seminars) than those who had not had mentors.

Additional benefits of mentoring have also been identified for the mentor. These benefits include rejuvenation and creativity (Levinson, 1978), psychological and technical support (Keele, 1981; Levinson, 1978), feedback and evaluation (Huffman and Leak, 1986), respect for the individual (Bova and Phillips, 1982), redirection of one's energies into creative and productive action (Kram, 1983), and a sense of obligation to become a mentor (Levinson, 1978; Ferriero, 1982).

Research by Wilson, Graff, Dienst, Wood and Bavry (1975) found that:

Faculty members who interacted the most frequently outside the classroom held more favorable views of students generally, and they more often endorsed statements reflecting an educational philosophy that
stresses faculty-student interactions and faculty concern for the whole student. (p.157)

As a result of such interactions between mentor and protege, students began to "further their interest in and commitment to intellectual concerns" (p.158). That is, the students were more knowledgable and had a greater ability to interpret and extrapolate information. The students also found that because of the interaction that took place, they perceived (See Table 1) themselves to have increased some of their academic skills in comparison to students who had not had a faculty mentor. The important point made in Table 2 is that as the interaction between faculty and students increases, the satisfaction level of the students in terms of the coursework, their knowledge and their ability to analyze, evaluate and synthesize also increases.

These relationships, as described by Wilson et al. (1975), need to be caring, supportive, and nurturing and provide for the academic and personal growth of the student. The authors conclude that students who had a high degree of interaction were more apt to take an active role in their own learning because they became more interested in pursuing their own intellectual interests.

Collaboration in Higher Education

Collaboration, as a method of providing professional development for new faculty, builds a collegial support system that provides a form of quality control for effective teaching. Wheller and Fanning (1989) are convinced that it also acts as an "effective delivery service" which, in turn, translates into a professional networking service for teachers. This networking provides all of the participants in the process with a
Table 1 The Outcome of Interaction for Students: Characteristics of Students as Seniors by Three Levels of Interaction with Faculty, in percentages. (Wilson, Graff, Dienst, Wood and Bavry, 1975, p. 160)

<table>
<thead>
<tr>
<th>As seniors report having made &quot;much progress&quot; in:</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge or specifics of a field.</td>
<td>56</td>
<td>57</td>
<td>68</td>
</tr>
<tr>
<td>Knowledge of universals and abstractions in a field.</td>
<td>43</td>
<td>48</td>
<td>58</td>
</tr>
<tr>
<td>Ability to comprehend, interpret, or extrapolate.</td>
<td>49</td>
<td>57</td>
<td>65</td>
</tr>
<tr>
<td>Ability to evaluate materials and methods.</td>
<td>48</td>
<td>57</td>
<td>67</td>
</tr>
<tr>
<td>Ability to apply abstraction or principles.</td>
<td>41</td>
<td>46</td>
<td>59</td>
</tr>
</tbody>
</table>

Frequency of out-of-class contracts with most impactful teacher:

| Seldom or never | 44  | 23  | 12  |
| Occasionally   | 45  | 50  | 37  |
| Quite often or frequently | 11  | 27  | 51  |

Named a faculty member as "the one faculty member who contributed most to your education/personal development."

| 66  | 80  | 84  |

Named a faculty member as having "played a role in your choice of major".

| 14  | 24  | 30  |

Expected and actual importance of satisfaction received from getting to know faculty members:

| As freshmen (expected) | 41  | 43  | 49  |
| As seniors (actual)    | 9   | 24  | 45  |

participated in study groups, classes, took independent study courses, served on faculty-student committees within colleges or departments. (p. 165)
professional bridgework which enables the sharing of information and skills in a nurturing environment.

In 1976, the Institute for Research on Teaching (IRT) at Michigan State University began a collaborative program between faculty at the university and teachers at public schools. The program, designed to assist teachers in their professional development, emphasized the importance of working with a diverse population and the goal of becoming sensitive to the needs of teachers and students (Porter, 1987). Porter, who guided the program, helped to break down the professional isolation that seemed to exist in both groups. The teachers felt that the collaborative environment provided them with a greater professional confidence and a strong commitment to excellence in education. They also saw the importance of exchanging ideas between teachers at all levels and becoming more analytical about the type of research that was generated concerning effective teaching. All of the participants felt that the benefits were evenly distributed and sharing in the decision-making was a strong source of professional development and built a stronger relationship between staff members.

Lieberman (1986) believes that the collaborative process provides a "method for reflection and action" (p. 32). It is a partnership which depends upon a strong commitment from all parties to be action oriented in resolving an issue or issues (Friedman, 1990). In this relationship, all parties "put away old concepts of distrust and accept the new partnership" (p. 6). All of the participants in this new partnership begin essentially at the same level of competence and work together on the same problem or issue rather than working "individually on separate components of a problem or in competition with other groups" (Phelps and Damon 1989, p. 639).
No participant is relegated to the role of a consultant so that one may rely more on the other. Each of the participants are considered to be clinicians and not technicians in this setting, according to Porter (1987).

**Conditions Necessary for Collaboration To Take Place.**

A search of the literature on collaboration has revealed that, like mentoring, certain conditions are necessary for collaboration to take place:

1. **Parity or Equal Status.**
   
   Each participant will not have more power than the other, each contributing equally to the partnership (Hord, 1986; Porter, 1987; Rosslyn, 1989; Friedman, 1990).

2. **Common Interests.**
   
   All of the participants will have a mutual interest in the subject matter of the relationship (Rosslyn, 1989; Rogers, 1990).

3. **Mutual Benefit or Reciprocity.**
   
   The participants will benefit from one another because each acts as a resource for the others (Rosslyn, 1989; Rogers, 1990).

4. **Interdependence.**
   
   Power balanced between the participants (Axelrod, 1989; Goldman and Intriligator, 1990).

5. **Trust.**
   
   The importance of trust in this relationship is essential for the professional growth of both participants (Rosslyn, 1989).

6. **The Need for a Common Language.**
   
   Common language is necessary so that all participants have a clear understanding of the goals and expectations (Rosslyn, 1989).
Voluntary Participation.

All participants should volunteer to participate in the collaborative process (Rogers, 1990).

Furthermore, De Bevoise (1986), identifies principles of collaboration which provide the bridgework for working with a diverse population: (1) collaboration starts with support from the administration, (2) not everyone is born to be a collaborator, (3) collaborators need to have realistic expectations, (4) collaborators should work toward consumer satisfaction, (5) collaborators should avoid becoming involved in the internal politics of the other institution, and (6) collaboration relies on effective delivery and reception system.

Potential Drawbacks in the Collaborative Process

As a matter of concern it is important not only to recognize the benefits but, more importantly, to recognize the potential limitations.

(1) Power.

The participants must be careful not to become involved in a collaborative effort that the administration does not support (Grument, 1989).

(2) Time.

Collaboration takes time before success becomes apparent (Grument, 1989). The participants should understand that they must maintain a reservoir of energy in order to assist one another over a sustained period of time (Porter, 1987).

(3) Interest.

Not everyone is born to be a collaborator. Those people with rigid agendas and practitioners who distrust theory and resist change
will find it very difficult to work in the collaborative environment (Porter, 1987).

(4) Vision.

It is extremely important for the administration to have the vision for empowering staff, so that they will involve themselves in a process of regeneration. Where there is no vision, the organization will become disabled (Grumet, 1989).

Benefits of Collaboration

The benefits of the collaborative processes are evenly distributed between the participants in most cases. Porter (1987) points out that "each individual or group sees itself as a primary beneficiary and tries to improve the benefits available to the individual or group" (p. 152). The process encourages collegial interaction and has the potential for encouraging great professional growth. It also helps to reduce the insularity that teachers may feel as a result of not participating in decision-making activities that directly or indirectly affect them.

As Grumet (1989) suggests:

When issues stay in the discrete departments, the faculty is divided into competing interests, just the situation Machiavelli recommended to those who would retain control. Then the general good is distinguished from the particular good. (p. 23)

Grumet (1989) identifies collaboration as a window of opportunity which allows the instructor to "leave behind the territories where special interests are rooted" (p. 23-24). It provides the teacher with an opportunity to minimize or eliminate isolation and the potential negative impact of being
sequestered from the rest of the faculty. The collaborative process is holistic. It looks beyond the individual teacher's classroom and suggests that whatever goes on in one room must influence what goes on in all the others.

Probably the most important feature of the collaborative process for new and experienced instructors takes place when they return to the classroom. Both participants bring a new taste and energy for helping their students seek their potential and provide for their own professional growth.

Collaboration has provided higher education with the opportunity to develop new partnerships with business and industry and the public schools (Porter, 1987). Successful collaborative programs that are currently in practice in the United States include: collaboration in research and development (Lieberman, 1986; Potter, 1987; and Rosslyn, 1989), organizational collaboration (Hurd, 1986), collaboration between instructors (Grument, 1989; Baker, 1990), collaboration between higher education and public schools (Friedman, 1990; Smith and Scott, 1990), partnership collaboration between public school faculty and human service agencies (Wheeler and Fanning, 1989), collaborative learning in teaching training (Pytlik, 1990), and, collaboration in staff development (Rogers, 1990).

**Peer Assistance in Higher Education**

Peer assistance is yet another method for assisting IGTAs (Little, 1985; Chrisco, 1989; Raney and Robbins, 1989). Like mentoring, peer assistance relies on an experienced teacher working with the less experienced teacher or IGTA. Parity or equal status is maintained by both participants because each has a vested interest in the other. They not only provide each other with intellectual companionship, but they also provide a supportive environment where professional growth can take place. One characteristic that seems to be
predominant in many of the studies on peer assistance was the reciprocity that existed between both participants in the program.

In a study of peer assistance for new teaching assistants at the University of Massachusetts, Stelzner (1986) evaluated the use of peer TAs in assisting new TAs in the classroom. This program of peer assistance enabled a selected group of professors to act as mentors for the peer leaders. Because of the nature of the program, the faculty felt that the new teaching assistants were not the only recipients of the professional development program. Faculty felt that their own professional development was enhanced by the new TAs because of their constant need for information and resources to make them more effective teachers. "The value of their [new TAs'] contributions, from the beginning of the resource center thirteen years ago, cannot be underestimated" (p. 211).

Puccio (1986), like Stelzner (1986), subscribes to the importance of offering a peer assistance program to new TAs. There is validity in the use of peer assistance and in an opportunity to empower the new TAs to uncover their weaknesses and turn them into opportunities to improve themselves. The use of peer assistance also gave the new TAs the chance to take their strengths in teaching and give them more depth as teachers in the university system.

Research by Wolfe (1990) confirmed what Puccio (1986) and Stelzner (1986) found in their research on peer assistance. Wolfe's study involved a peer assistance program for community college students, using faculty mentors as guides for the peer leaders. The faculty found that acting as mentors provided them with an opportunity to observe other faculty in order to gain a perspective of what the students encounter when they are in the classroom.
The result of Wolfe's (1990) program of study was that "faculty mentors reported that the luxury of listening to a respected colleague in a challenging course outside their own discipline was stimulating" (p. 52). The faculty also felt that the program "provided an opportunity to broaden their professional expertise and their perspectives on student learning. They also developed new teaching approaches and a new awareness of their own personal teaching styles" (p. 57).

Finally, the peer assistance program provided faculty with a commitment to assist one another and to explore innovative teaching techniques and strategies.

Conditions Necessary for Peer Assistance to Take Place

Like the conditions for mentoring and collaboration, the success of peer assistance programs is also based on several conditions:

(1) Financial and Logistical Support.

This support is essential from the administration. It insures that the concept is accepted by the leadership of the institution and also allows the administration to run interference for the peer assistants and their colleagues (Raney and Robbins, 1989).

(2) Supportive Environment.

It is important that both parties bring to the relationship a strong commitment to one another (Raney and Robbins, 1989).

(3) Voluntary Participation.

Is very important that both parties volunteer so that each has a vested interest in the success of the relationship (Raney and Robbins, 1989).
(4) Facilitation.

The peer assistants who participated in many of the programs felt that their roles were to facilitate and not to lead. Although leadership was considered to be important, the peer assistants felt that it was more important to participate as a facilitator (Raney and Robbins, 1989).

(5) Time Factor.

Another factor, which seems to be equally important to the peer assistant, is the time given by the administration to participate in the program. This gives the peer assistants the flexibility they need to work with the new instructor without imposing on their classroom responsibilities (Raney and Robbins, 1989; Ferren and Beller, 1986).

(5) Formal Training.

A final condition for developing effective peer assistance is that formal training programs need to be offered and required of all peer assistants. These training programs would equip the experienced teachers with an expanded repertoire of mentoring skills as well as providing an atmosphere of support for the peer assistants (Raney and Robbins, 1989).

It is important to note that the existing differences in the conditions that are necessary for mentoring, collaboration, and peer assistance to take place are matters of degree, rather than major differences in each category. Even though the subcategories may have been called by different names, the authors' explanations were similar, so that there were more similarities than differences.
Potential Detriments to Peer Assistance

(1) Power.

It is important that neither party in the peer relationship be seen as the leader. If this happens, the reciprocity that normally occurs may cease to exist (Stelzner, 1986).

(2) Information.

Information shared between peers should not be shared with administrators because it might undermine the relationship (Stelzner, 1986).

(3) Vision.

If there is little or no support from the administration, the peer relationship may be stifled (Wolfe, 1990).

(4) Working Relationship.

A lack of sensitivity on the part of either party may very well damage the relationship, and the element of trust is lost (Wolfe, 1990).

Benefits of Peer Assistance

Research by Raney and Robbins (1989) also found that there were additional benefits for peer assistants. "Coaching new instructors sensitized the coaches to their own daily interactions with students" and it utilized those experienced instructors in such a way that they also benefited from the experience (p.36).

This innovation (peer assistance) promises to reduce the instructors' isolation, to create a collegial and professional environment in the educational system, and to promote the transfer of skills from training to the workplace. (p. 37)
With the implementation of the various peer assistance programs, seven benefits emerge. First, the peer assistants felt that there was an increase in communication; dialogue was encouraged to assist in the growth of the new teacher as well as the experienced teacher. Second, the programs assisted teachers in developing an awareness of the resources around them. Third, teachers were provided with a professional accountability that recognizes their responsibility to help each other grow professionally. This responsibility extended to challenging each other to reach their potential. Fourth, many of the teachers were able to let go of the notion of having to be perfect, "realizing that it is okay to let their rough edges show" (Raney and Robbins, p. 37): Fifth, there was an openness to new ideas and a willingness to assist others. Sixth, faculty were allowed the opportunity to observe their colleagues and to benefit from the experience (Wolfe, 1990). Seventh, interchange across the curriculum not only stimulated thought but also helped to develop rapport between colleagues and sensitivity for the teaching process.

**Peer Collaborative Mentoring as a Method of Professional Development for the IGTA**

The PCM provides a process for empowering new and experienced TAs to develop partnerships and effective delivery services. It also allows all participants to join resources, divide labor, alleviate academic isolation, nurture autonomy, sustain motivation, and create a self-generating energy where ideas and opinions are validated and individuals become self-reliant. It is a professional developmental model that provides a structure for developing techniques and strategies that can increase the quality of life in the IEPMs classroom.
Need for Further Study

A search of the literature has shown that there is a need for further research in mentoring international teaching assistants. Merriam (1983) asserts that: "the phenomenon begs for clarification and a better means of assessing its importance needs to be developed" (p. 171).

Research by Mandell, (1977), Zeichner, (1977), Merriam, (1983), Xu and Newman, (1987), and Bender, (1990) acknowledge the importance and need for the socialization and nurturing of new instructors. They identify the induction period as a very important period of time for the new teacher. This period of time requires an environment that supports and assists the new teacher so that professional growth can take place. Establishing this type of environment is essential and assists the new instructors in developing the appropriate strategies and techniques which will help them become more effective as classroom instructors.

Huling-Austin (1987) maintains that educational institutions are at a point in induction programs where they need to begin investigating and documenting the various ways in which new instructors learn and discover what experiences brought them to the teaching profession. By studying these factors it is possible to develop "if-then principles" which would provide a guide for the development of mentoring programs.

Pavalka and Holly (1974) and Monaghan (1989) point out that IGTAs, like junior faculty, need additional assistance beyond the prescribed programs that colleges and universities typically provide for their new teaching assistants. These targets of assistance need to be designed to help reduce the international teaching assistants' insularity while in the American university system and to assist them in their professional development. McCaleb (1985) maintains that few studies have been conducted which investigate the effects
of specific intervention procedures for new instructors. Thus, there is a need for additional clarification and research which will assist in the nurturing and development of the new instructor.

Research by Howey (1988) indicates the need to provide professional assistance for the inexperienced instructor, especially, since the main task is to learn to think in ways that are appropriate to the culture of the new classroom, department, and institution. Maintaining a sustained sequence of support and instructional guidance is needed, at least more than what the academy has been able to provide.

Nyquist, Abbott and Wulff (1989) are also in agreement with Howey's desire to provide professional assistance and, they believe that there is a strong need for more research on TA socialization with special attention to the needs of the international graduate teaching assistant at American universities. They noted that, for over sixty years, the training for teaching assistants has remained virtually unchanged with little research being done on the variety of people on the individual campuses who can make significant contributions to TA training. Some of the biggest challenges for new teaching assistants are to: (1) Acquire sufficient information on unfamiliar policies and procedures; (2) to broaden the new TAs' repertoire of teaching techniques and strategies; (3) develop cultural socialization skills, which involves social practices that are unique to the culture of a specific department; and finally (4) share ideas and develop professional relationships.

Abbott, Nyquist, Wulff and Sprague (1991) see the lack of systematic preparation for teaching assistants as a result of a number of forces in concert.
The Academy's dependence upon, preference for, and responsibility for research activities; limited research assistantships available for graduate student support which force graduate students who do not intend to teach into temporary teaching positions; the attractive economics of staffing undergraduate courses with teaching assistants, incentive systems built into most institutions which clearly reward research over teaching; a strong belief that if scholars know their disciplines they can automatically teach them; limited definitions of scholarship and lack of research on effective TA training. Finally, the absence of adequate preparation of the current faculty has resulted in few models or approaches that they can use in mentoring or apprenticeship relationships with TAs. Most professors end up asking, 'How can we be expected to teach well and to teach others well when we've had no training ourselves'? (p. XII)

Gray (1991) concludes that very little research has been done on mentoring new teaching assistants in higher education and, in particular, mentoring new international teaching assistants. The subject calls for more research and clarification, with special attention given to those from the international community who are new to teaching at an American university. McCaleb (1985) supports Gray's contention and also concludes that there is a need for continued research and clarification of intervention programs for new teachers.

Nyquist, Abbott and Wulff (1988) feel that there is a strong need for more research on TA socialization with special attention to the needs of international graduate teaching assistants at American colleges and universities. It is important to broaden the new international teaching assistants' repertoire of teaching techniques and strategies and to develop the cultural socialization skills that are unique to the department and the university where they are teaching. With these challenges in mind, Nyquist, Abbott and Wulff call for more research and clarification with special
attention given to international graduate teaching assistants who are preparing to teach at an American university.

Significance of the Study

Although the concept of mentoring in academe has increasingly gained acceptance as an activity that assists and supports new faculty, there has been little written about how mentoring impacts new international teaching assistants (IEPMs). This study examines the concept of Peer Collaborative Mentoring in a cross-cultural setting as a method of professional development for IEPMs at an American university.

This study will extend current information in the literature on mentoring international graduate teaching assistants by clarifying what impact the PCM process has on the IEPMs, the students and IAPMs. The study should also suggest the conditions that are necessary for IAPMs and IEPMs to work together. The study should indicate that the IEPMs may not be the only ones to benefit from PCM. Knowing more about reciprocity in the mentoring relationship may yield evidence that experienced instructors will become better teachers because of the mentoring experience.

Since most of the training of IEPMs involves the use of experienced faculty and TAs, what is found in this study may be of value to other institutions of higher education who are developing training programs for their IEPMs. Perhaps training experienced TAs to be mentors would also help to develop a mentoring training model within individual departments that is self-perpetuating for all TAs.
Research Questions

1. What interactions occurred during the Peer Collaborative Mentoring process?
2. Why did the interactions occur?

Summary

In conclusion, providing a system of assistance and support for those individuals who are considered novices is certainly not a new concept. What is new, however, is that this practice is being recognized and accepted by business and industry, colleges, universities, and schools, and by a variety of other organizations. These institutions and organizations avoid wasting their scarce resources and see the value in developing their human resources to their full potential so that everyone benefits from their presence.

Professional development for the new instructor is seen as an essential service which needs to be provided by colleges and universities. It is an opportunity for the institutions to be accountable for the care and nurturing of their faculty. Research indicates that providing these types of services helps to reduce the isolation and the frustration that most new IGTAs feel during the first year of teaching.

Peer collaborative mentoring is a concept designed to assist IGTAs in developing their instructional strategies and techniques, while teaching at an American university. By providing a collaborative setting for the IAPMs and IEPMs to work in, both parties will be given the opportunity to share their knowledge and skill with one another.

In the end, the hope of the PCM program is to increase the instructional skill level of the IEPM's, which in turn will provide a more effective instructional setting for the undergraduate students. It will also
provide the IEPMs department and the university with an educational
environment that supports the professoriate of tomorrow and acknowledges
the importance and value of preparing effective instructors for the classroom.

We shall not cease from exploration
And the end of our exploring
Will be to arrive where we started
And know the place for the first time . . .

T.S. Eliot
CHAPTER III

Design and Methodology

Chapter III includes a description of the research design and methodology which was used to analyze the reactive and interactive effects of the Peer Collaborative Mentoring (PCM) process on the Intracultural Peer Mentors (IAPMs) and the Intercultural Peer Mentors (IEPMs). Included in the chapter are descriptions of the conceptual framework, design and rationale, population and sample, data collection, analysis of data, and summary.

Conceptual Framework

This is an ethnographic study which investigates a specific cultural environment and allows the investigator to make sense of the world from the perspective of the participants. This study utilizes multiple data collection techniques and an inductive approach (general to specific) in analyzing the data. The framework for this ethnographic study is based on the following strategies recommended by Pelto and Pelto (1978) and Wilson (1977):

1. provide a representative view of the participants being investigated;
2. utilize first hand accounts which come from a field experience in the real world;
3. seek to construct a holistic description of the program being studied, and identify the major variables that are affecting human behavior;
4. use a variety of research techniques to acquire and analyze the information.
Taylor and Bogan (1984) also support the concept of ethnography and identify the following characteristics which they consider to be essential elements of qualitative research: (1) It is inductive; (2) the researcher views the participants and environment as a whole and not as separate entities; (3) "interaction with informants in a natural and unobtrusive manner;" (4) empathize with the participants; (5) the researcher is observing the events for the first time; (6) each of the participant's contributions are of value; (7) participants are treated as valued human beings; and (8) validity is considered to be one of the most essential ingredients. (pp. 5-8)

The conceptual framework for this study involves the Mentoring Research Project at Oregon State University and the implementation of the Peer Collaborative Mentoring process in the Chemistry Department. The following research questions provide the structural guidelines for the direction of this study.

1. What interactions occurred during the Peer Collaborative Mentoring process?
2. Why did the interactions occur?

Design and Rationale of the Study

This study implemented Yin's (1984) principles of data collection which include the use of (1) multiple sources of evidence which converge on the same set of facts and (2) a chain of evidence that links the observations and questions asked, the data gained, and the conclusions drawn. The methodology employed for the collection of data was based upon qualitivative evaluative research conducted by Miles and Huberman (1984) and Patton (1980). The authors utilize multiple sources of evidence which are
designed to contribute to the strength and increase the validity of a study. This form of data collection encourages convergent lines of inquiry and relies on triangulation to help guard against the danger that the study was an artifact of a single method of inquiry. This study employed two forms of triangulation: (1) investigative triangulation and (2) triangulating data sources.

Investigative triangulation involves the use of multiple investigators. This form of triangulation helps to reduce the potential bias that comes from a single person (Patton, 1980). The second form of triangulation involves the triangulation of data sources. This allowed the investigator the opportunity to compare a variety of data from the IEPMs, their students and the IAPMs. The analysis took the form of comparing observational data and interview data over a twelve-week period by comparing perspectives of the subjects, and by checking the consistency of what the participants said and did over a period of time. This type of triangulation provides consistency in the overall patterns of data from the different sources and contributes significantly to the overall credibility of the findings presented in Chapter IV (Patton, 1980).

Overall, this study utilized a methodological mix of resources to establish credible links in the information chain.

This study began with the implementation of the Peer Collaborative Mentoring program for novice IEPMs at Oregon State University. The procedure in this study was to implement a PCM program for IEPMs, in the Department of Chemistry. At the beginning of the 1990-1991 academic school year, the Chemistry Department and the Mentoring Research Project Coordinator identified a group of five graduate teaching assistants who would be asked if they would volunteer to participate in a mentoring program. Three graduate students from the Mentoring Research Project and five new Chinese Graduate Teaching Assistants from the Chemistry Department were
asked if they would be willing to volunteer to participate in a special mentoring project. All of the five teaching assistants and three graduate students agreed to participate in the project beginning December 7, 1990, through March 31, 1991.

Following the decision to participate in the implementation phase of the MRP, the three graduate students from the Mentoring Research Project and the participants met with the supervisor of the IEPMs on December 1, 1990. The formal meeting was designed to accomplish three goals: (1) to secure permission from the IEPMs to participate as clients in the MRP; (2) to explain the objectives of the MRP; and (3) to establish an initial rapport with one another and develop shared interest in what the MRP could do for the participants. At the conclusion of the meeting, each of IEPMs agreed to participate in the program.

Initially, a schedule of meeting dates was established. These dates included individually scheduled meetings between IEPMs and IAPMs and observations in the IEPMs labs. These meetings were designed to provide structure for the participants and to create an atmosphere where Peer Collaborative Mentoring might take place.

The interview protocol and questions gave direction and guidance to the IEPMs and the IAPMs. The interview questions were designed to be semi-structured and to yield information on demographic data, process data and values data from the IEPMs, their students and the IAPMs. The interviews were conducted by the principle interviewer and were conducted on-site in the Chemistry Department between December 1, 1990, and March 31, 1991. The average amount of time spent interviewing each participant was fifty-five minutes.
Population and Sample

The Mentoring Research Project and the Chemistry Department at Oregon State University were selected as the focus for this study. The Mentoring Research Project is a pilot program that was developed and implemented by a group of graduate students under the supervision of Dr. Meg Savige, an assistant professor from the College of Education at Oregon State University. The program was designed as a support system for first year international graduate teaching assistants at Oregon State University. The program was offered to selected departments and international graduate teaching assistants who volunteered to participate in the program.

The Mentoring Research Project involved the development of a collaborative mentoring program for new Chinese Graduate Teaching Assistants in the Chemistry Department during the 1990-1991 school-year. The reasons for selecting this particular program was based on three needs: (1) the need for empirical research on mentoring Chinese teaching assistants at American universities; (2) the need to provide additional assistance for international graduate teaching assistants at America universities; and (3) the need to determine the interactive effects of Peer Collaborative Mentoring.

Patton, (1980) and Kerlinger's, (1964) sampling strategy was employed in this study in order to maximize sample richness and depth. Both Patton and Kerlinger believe that this type of sampling increases the utility of the information obtained from small samples. Their strategy was a deliberate effort to obtain a representative sample by including a presumably typical area of the group or groups being studied.

The participants in this study included three mentors (IAPMs) from the Mentoring Research Project. The IAPMs included one Ph.D candidate and two master's degree candidates. The Ph.D candidate was considered to be
the team leader and was responsible for providing direction to the other IAPMs. Of the three IAPMs, one was female. The clients in this project were five male IEPMs from the Chemistry Department, all Ph.D candidates. Four of the IEPMs were responsible for the instruction of three laboratory sections during the term, and the fifth IEPM was responsible for grading papers and tutorial work with students. Furthermore, the students of the IAPMs were included in the study.

The data for this study were collected over a four-month period of time, beginning on December 7, 1990 and ending March 31, 1991. Data were gathered through interviews which were recorded on audio tape. The use of audio tape recorders and note taking during the interviews minimized the loss of significant data. Note-taking was used to record incidents and conversations that occurred but could not be recorded at a specific time. After the completion of each interview, the notes and tape recordings were immediately reviewed and then transcribed within twenty-four hours so that accuracy of content was maintained.

Data Collection

Five methods of data collection were employed in an attempt to understand (holistically) the phenomena of Peer Collaborative Mentoring and its impact on the participants. Often, all methods of collecting data were employed in combination. "In ethnographic research, the more perspectives represented, the stronger the research design, because each additional perspective contributes to a more complete picture of the scene of interest" (Eisenhart, 1985, p. 106).
1. Participant Observer

The primary method used in this study to gain access to data was the use of the participant observer role. This technique was the ethnographer's primary strategy for collecting data in the field and is considered to be the main conduit for the collection of data and analysis (Pelto and Pelto, 1978).

The participant observers in this study were the IAPMs. Their activities were not concealed to the IEPMs but were clearly secondary to the activities as a participant. An observer protocol schedule is included in Appendix A.

Observations were made of the IEPMs, their students and the IAPMs. During this period of time, permission was given by the IEPMs to interview the students. Students were then asked for their permission to be interviewed during class. The team leader also conducted observations of the IAPMs at least three times per week. The observational data were either recorded or quoted as accurately and factually as possible within a period of 24 hours. Side notes were also added in order to capture any perceptions that might occur during the actual transcription.

This investigator believes that the participant observer methodology provided an opportunity to view the participant population from an internal rather than from an external viewpoint. Such a perspective was valuable in producing an accurate portrayal of the effects of PCM. Each participant observer not only experienced participating in the program but also had the opportunity to see things that may have escaped the conscious awareness of other participants (Patton, 1980).
2. Ethnographic Interviewing

The second interactive method for collecting data was ethnographic interviewing. These interviews were the principal method of identifying the participants' subjective views. A semi-structured interview format was the principle type of interview used in this study. Following Patton's (1980) advice on the use of semi-structured interviewing, the interview protocol was divided into three categories: (1) a standardized open-ended interview (questions previously established); (2) an interview guide; and (3) an informal, conversational interview. The interview guide provided the investigator and the participants with a constant reminder of the overall intent of the interview and the important issues that were under investigation. Ideas and topics identified through the collection of interview data were recorded and are discussed in Chapter IV.

The protocol for the interview was semi-structured, that is, the respondents were not limited to a set of predetermined answers. All were encouraged to speak at length on each question and were given every opportunity to elaborate on their answers. Interviews were audio-taped and extensive notes were taken. After the interviews, the notes and audio-tape were transcribed, coded and analyzed using the process of data reduction.

The interview questions were reviewed by a professor from the College of Science, a professor from the Department of Anthropology and two Ph.D candidates from the College of Education at Oregon State University. The interview questions were revised two times to insure that they were both appropriate and congruent with the research questions. The final versions of the questionnaires were pilot tested by two Chinese Graduate Teaching
Assistants and two of the facilitators. The final version of all the questions is found in Appendix B.

Three goals were identified for the interview protocol schedule and questionnaires:

(1) The first goal was to obtain demographic and biographic data on the IAPMs and IEPMs.

(2) The second goal was to identify the types of interactions that occurred between the IEPMs, their students and the IAPMs.

(3) The third goal was to identify why these interactions took place between the IEPMs, their students and the IAPMs.

All participants in this study had the option of ending the interview and the study at anytime they deemed it necessary (Patton, 1980).

3. Evaluations

Evaluation surveys (See Appendix C) were administered to the students and IAPMs. These evaluations were structured questionnaires whose purpose was to assess the extent to which participants hold similar or dissimilar beliefs and executed comparable or contrasting behaviors. The evaluations required participants to respond to demographic questions as well as questions concerning teaching techniques and strategies.

4. Archival Collection

This method allowed the investigator to gather data with little or no exchange between the participants. The archival information included evaluations of all IEPMs over the past five years in the Chemistry Department and evaluations of the client IEPMs in this study from the previous term(s).

5. Reflections
This method of data collection focused on the researchers reflections on the phenomena being studied. The ethnographer kept a diary, during the course of the study that included emerging interpretations and insights of the PCM process and the participants.

Data Analysis

Data Analysis occurred throughout the process of data collection. It was a process of continually analyzing the information obtained through interviews, observations and evaluations. Clearly, this activity provided the researcher with a continual update of information. Each interview, observation and evaluation was viewed in light of previous interviews and observation. It was important to see what comparisons or contrasting information might be gained from one set of notes to another.

Taylor and Bogdan (1984) believe that both data collection and data analysis go hand-in-hand.

Throughout participant observation, in-depth interviewing and other qualitative research, researchers keep track of emerging themes, read through their field notes, or transcripts, and develop concepts and propositions to begin to make sense out of their data. (p. 128)

The method employed for analyzing data was based upon Miles and Huberman's (1984) text, *Qualitative Data Analysis: A Sourcebook of New Methods*. Their interactive model involved three concurrent flows of activity as illustrated in Figure 5.

The model provided a clear picture of the three functions of analysis activity and includes data reduction, data display, and conclusion.
drawing/verification. Data collection was included in the process because it constantly interacted with the other three functions.

The researcher steadily moves among these four 'nodes' during data collection, then shuttles among reduction, display, and conclusion drawing/verification for the remainder of the study. The coding of data, for example (data reduction, leads to new ideas on what should go into the matrix (data display). Entering the data requires further data reduction. As the matrix fills up, preliminary conclusions are drawn, but they lead to the decision (for example) to add another column to the matrix and test the conclusion. (Miles and Huberman, 1984, pp. 22-23)
Data Reduction and Establishing Categories

The first step in analyzing the data was to classify the information through a process of data reduction. This process involved selecting, abstracting and focusing the raw data so that the researcher could convert the field notes and observation into categories for analysis (Miles and Huberman, 1980). The objective was to look for patterns and themes which could then be categorized. The categories were analyzed using Guba and Lincoln's (1981) criteria for data reduction. The first set of criteria involved the use of internal homogeneity. This provided the researcher with a framework for collecting data that were linked together or "dovetailed in a meaningful way." The second criteria focused on "external homogeneity" which involved determining the differences between the categories.

At the beginning of the study, generic categories were established. These categories were based upon the research questions and the interview protocol. In keeping with Guba and Lincoln's (1981) protocol, all of the data was collected before the seven categories were developed (Demographics, IAPM Socialization, Dynamics of Peer Collaborative Mentoring, Gender, Language, Phases of Peer Collaborative Mentoring and Benefits of Peer Collaborative Mentoring). This allowed the researcher to become more detailed in coding the information and provided a protocol for information that was not part of the original study.

Data Display

The second major flow of analysis was data display or matrix. Miles and Huberman (1980) define a data display as the "organized assembly of information that permits conclusion drawing and action taking." The use of the display helped to assemble and organize the data so that the information
was both articulated and condensed for the reader. It is important to note that the display was merely an organizational tool. The most important data provided in the study was to be in the form of a detailed descriptive text which included information from the participants, themselves, and from the field observations.

After describing the patterns and linkages that have emerged from the data, it was important to look for other ways to organize the data to support alternative explanations. The important point to remember is that the investigator was looking for the best fit of the data collected and the strategies for analysis of that data.

**Conclusion Drawing and Verification**

The final component of analysis involved the use of conclusion drawing and verification. According to Miles and Huberman, (1984); Patton, (1980); and Guba and Lincoln, (1981), this process tests the data that has been assembled for its plausibility, sturdiness, and confirmability. The process was also seen as continuing throughout the study, as illustrated in Figure 5.

**Summary**

The purpose of this research was to study Peer Collaborative Mentoring as a model for the professional development of international graduate teaching assistants. The primary method of analysis was characterized by an inductive approach with a continuous movement of data, as illustrated in Figure 2. The inductive approach, as described by Guba and Lincoln, (1981), was also characterized by a constant comparative method of analysis and included identifying the organizing codes and then clarifying the link between the codes and data.
An interview protocol and observation protocol were developed in order to study the research questions. The effects of PCM on the IEPMs, conditions necessary for mentoring the IEPMs and classroom outcomes were investigated by means of open-ended questions, in-depth interviews and observations. The data from these instruments formed the bases for the analyses to follow in Chapters IV and V.
CHAPTER IV

Analysis of Data

This chapter will present an analysis and discussion of the results and will construct a holistic account which represents the views of the participants. Chapter IV addresses seven areas: (1) Demographics; (2) IEPM socialization; (3) dynamics of the peer collaborative mentoring process; (4) gender; (5) language; (6) phases of peer collaborative mentoring; and (7) benefits.

Introduction

The purpose of this study was to investigate Peer Collaborative Mentoring as a source of professional development for International Graduate Teaching Assistants at Oregon State University. Figure 6 illustrates the categories that were created from the data reduction to develop the Peer Collaborative Mentoring Interactive Model. These categories will serve as guidelines in answering the following research questions:

(1) What interactions occurred during the implementation of the Peer Collaborative Mentoring process?
(2) Why did these interactions occur?

The Peer Collaborative Mentoring Interactive Model represents the focal point for this study (See Figure 6). Six categories (IEPM Socialization, Dynamics of PCM, Language, Gender, Phases and Benefits) represent findings from analysis of the PCM process. During the course of this study,
the Chinese Graduate Teaching Assistants in the Chemistry Department were called Intercultural Peer Mentors (IEPMs). These peer mentors
were not native to the United States. The American graduate students were called Intracultural Peer Mentors or IAPMs. All of these students were native-born Americans.

Chapter IV will employ the following organizational structure. First, a narrative will be provided for each category (IEPM Socialization, PCM Dynamics, Language, Gender, Phases, and Benefits). Each narrative will describe interactions which occurred during the implementation of the project. Comments from the participants on the interactions and reactions of the PCM process will be included. Second, an analysis of the participants' interviews and observations will be made by the principle observer. Third, a theoretical framework will be provided to respond to the question of why the interactions and reactions took place in each category.

Demographics

The participants in this study included five Chinese teaching assistants/peer mentors, three American graduate students who were peer mentors, and one hundred thirty undergraduate students in Chemistry 105. The data that were collected came from interviews (See Appendix B) with the IAPMs, IEPMs and undergraduate students; observations of the IAPMs, IEPMs, and their undergraduate students; student evaluations (see Appendix C); and surveys that were administered to the IAPMS (see Appendix D).

The first group of participants to be profiled are the five novice Chinese Graduate Teaching Assistants (IEPMs). It is important for the reader to note that all subsequent citations and references to the IEPMs in this text do not match the numbering of the IEPMs that follow. Four of the five IEPMs came from metropolitan areas located near or on the Southeastern coastline of the
PRC. Each of these cities exceed 3,000,000 in population. The home of the fifth IEPM's was in the middle southeastern portion of the Peoples Republic of China. This city also had a population in excess of 3,000,000. The five IEPMs were male and ranged in age from thirty to thirty-two years. Their combined teaching experience in China totalled fourteen years.

Profile Description of Intercultural Peer Mentors (IEPMs)

IEPM 1 is thirty-one years old, single, and is working on his Ph.D in Analytical Chemistry. He attended East China Normal University in Shanghai as an undergraduate and as a graduate student. His major at that time was physics. After completing his masters degree he lectured at Shanghai University of Technology for four years. He was responsible for teaching undergraduate classes in General Physics and Laser Technology. While he began his English training in primary school, it was not until his collegiate career that he seriously began to practice speaking English as a second language. He was required by his undergraduate institution to take at least two years of English as an undergraduate and one year as a graduate student. After his arrival at Oregon State University, he was also required to take coursework in speaking English from the English Language Institute. Currently he is a research assistant and a tutor for the Chemistry Department.

IEPM 2 is married, thirty-one years of age, and is working on his Ph.D in Chemistry. He attended Zhejiang University in Hangzhou as an undergraduate, and then attended Shangi-Jiaotong University as a graduate student. After completing his masters degree, he taught at Zhejiang University for four years. He taught Elements and Material Science to undergraduate students in Chemical Engineering. He also received formal training in the English language as an undergraduate and graduate student.
As an instructor at Zhejiang University, he wrote in English and spoke in Chinese (for the benefit of his Chinese and American students). At the time of this study, he taught three Chemistry 105 laboratories with approximately twenty student in each lab.

**IAPM 3** is thirty years old, married, and is working on his Ph.D in Organic Chemistry with an emphasis in Analytical and Physical Chemistry. He attended East China University of Chemical Technology in Shanghai. While in the Peoples Republic of China, he taught a Chemistry Training class for four years. He began his English training in 1978 and has spoken English for approximately eight years. He received two years of English training as an undergraduate and one year in his graduate program. IAPM 3 also received additional training in oral English for one year before he went to Great Britain to attend an International Conference on Chemistry. Presently, he is a laboratory teaching assistant for the Department of Chemistry. His responsibilities include the instruction of three Chemistry 105 labs.

**IAPM 4** is married, thirty years of age, and is also working on his Ph.D in Chemistry with an emphasis in Bio-organic Chemistry. He attended Sichuan University which is located in Chengdu. After graduating from the university, he taught Chemistry to undergraduates for two years at Sichuan University. He has been speaking English fluently for four years and has "been practicing speaking English for at least twenty minutes per day since middle school." Coming to the United States a year before his teaching assistantship at Oregon State University, he was enrolled in an oral English class at Lane Community College for two terms. Currently, he is teaching two labs in Chemistry 105 and is also teaching a graduate course in Chemistry.

**IEPM 5** is thirty-two, single, and has lived in the Southeastern part of the Peoples Republic for most of his life. He attended East China University
of Chemical Technology in Shanghai. After completing his academic work, he was a researcher for the university for four years. He did not teach in the PRC but worked in a laboratory setting with other Chinese students. His training in the English language began in middle school and continued until his graduation from college. Although he has spoken English for some time, he has not spent a great deal of time speaking conversational English until this last year. His current assignment in the Chemistry Department is teaching two labs of Chemistry 105 and providing tutorial assistance.

None of the IEPMs had any coursework on teaching at their home universities. The only professional development experience that they had prior to the PCM project was the actual experience of teaching itself. In a series of interviews the following comments were made about the IEPMs teaching experience. "Our teaching experience is somewhat limited." "We do not have the benefit of teacher education programs in China. We (IEPMs) lecture and the students take notes; the students have very few questions and the students take their exams." "I think that I am a good teacher, but I still have much to learn about teaching in America, and I am worried about how I speak, and what the students will think."

Profile Description of the Intracultural Peer Mentors (IAPMs)

The second group of participants in this study was composed of three American graduate students from Oregon State University. The reader should note that all subsequent citations and references to these IAPMs in this text do not match the numbering of the IAPMs which follow. Each graduate student participated in the Mentoring Research Project (MRP) project as a peer mentor for the five novice Chinese Graduate Teaching
Assistants. The combined teaching experience of the IAPMs totalled thirty-three years.

**IAPM 1** is forty-eight years old, single and a Ph.D candidate in Education. He taught for twenty-four years, eighteen years as a high school teacher and six years as a teaching assistant and instructor in the College of Education at Oregon State University. He is currently the Director of the Teaching Assistant Training Program at Oregon State University and has extensive experience in training international graduate teaching assistants. Also, he has been involved in the design and implementation of several mentoring programs during his career. At the present time he is the team leader, principal investigator, and the principal participant observer in the PCM project with the Chemistry Department.

**IAPM 2** is the only female participating in the PCM project. She is thirty-three years of age, single and is currently working on her master's degree in Education at Oregon State University. She has taught in community educational programs and has been a consultant for various public organizations. She has also had experience working with individuals and groups from various cultures.

**IAPM 3** is also a master's degree candidate in the College of Education. He is married and is forty-six years of age. His experience has included teaching at the Utah Police Academy, the Salt Lake County Sheriffs Office, the Team Oregon Motorcycle Safety Program and at Oregon State University is a teaching assistant in the Hotel, Restaurant and Tourism program. IAPM 3 has worked with numerous culturally diverse populations.
Profile Description of the Undergraduate Students

The third group of participants in the study consisted of 130 undergraduate students who were taking classes from four of the five IEPMs (TAs). The average age of the undergraduate student was 20 years. There were 75 males and 55 females in the Chemistry 105 labs, of whom 86% had no experience with international teaching assistants. Chemistry 105 was the students' first experience with chemistry at the collegiate level. Prior to this time, 47% of the students had taken chemistry in high school.

Pairing

An important feature of the PCM project prior to the implementation phase was the selection and matching of IEPMs and IAPMs. No formal matching occurred because of the unequal numbers of participants and an agreement between mentors that pairing would be counterproductive to collaborating with one another. Although the literature suggests that every effort should be made to match participants in a variety of ways, the IEPMs requested that the group remain intact to facilitate group collaboration, which had been their experience in China.

IAPM Socialization

The IAPMs believed that a sense of collaboration within their own team was an essential ingredient for the success of the PCM project. All three IAPMs felt that collaboration was a process that would embrace a diverse population and could provide a supportive environment where professional development took place. They also hoped that, in developing a truly collaborative relationship, a strong level of trust would be built between the participants (IAPMs and IEPMs). They believed that this trusting relationship
would lead to shared authority and less sovereignty which would result in everyone benefiting from the collaborative process.

**Observations of IAPMs**

The IAPMs believed that there was value in maintaining realistic expectations of what all the participants could do. In other words, it was important not to overload the participants. As one IAPM noted:

> It was so easy to become wrapped up in the process. The enthusiasm was incredible, at times it was like a runaway train. I had to really take time to think about the energy that was being generated, not just by me but by the other two IAPMs. We spent a lot of time talking about this issue, especially at the beginning of the project, I mean the implementation phase. We basically decided that it was important that we didn't go to critical mass. All that energy had to be selectively channeled so that we wouldn't overload our new friends. We didn't want them to melt down or cognitive overload. That was an important decision for us to make. We couldn't just look at ourselves, we had our friends to consider.

During the project, the IAPMs spent a great deal of time considering how the PCM process was going to be applied in working with the IEPMs. The IAPMs made the decision prior to meeting with the IEPMs, to prepare themselves by addressing the most immediate need. This was to begin background research on the Chinese culture, with emphasis on the educational system and on developing relationships. The IAPMs felt that there was great value in developing a mental picture of their "client."

> We all seemed to feel that there was strength in the background search. Hopefully, it would provide us with information that would be germane to the population we [IAPMs] would be working with. It was not enough to just read about the Peoples Republic
of China. It was also very important to interview Chinese graduate students who were currently at the university and American students and professors who had been either students or visiting faculty in the PRC.

After completing the background search to develop a basic understanding of the Chinese culture, the following factors were identified as significant to the development of a relationship with the IEPMs based on reciprocity, parity, mutuality and cultural sensitivity.

(1) Honest Commitment to the PCM Process. "We felt that we had to create an atmosphere which was honest and supportive." The IAPMs felt that this element was an important part of the Chinese culture and one that was not always practiced by Americans. It was important to maintain this type of environment to preserve the integrity of the relationship and the process. "It seemed to be a clear cut case where action would speak louder than words."

(2) Equal Partnership. "We came into this relationship with the idea in mind that all of the parties (i.e. IAPMs and IEPMs) would be equal." The IAPMs felt that no one person should be considered to be more important or more powerful than another. It is important to note that this was not the same thing as having more skill in an area than the other participants.

(3) Patience with the Process Itself. Patience and cultural sensitivity was an important element in the relationship with the IEPMs for two reasons: the language difference and cultural differences. "It seemed that a slower pace was going to be a fundamental necessity in order to accomplish the smallest tasks."
(4) Emphasis on Mutuality of Ownership of the Process. It was important for each person to feel that they (IEPMs and IAPMs) were a stakeholder in the PCM process. Providing this kind of an opportunity for the IEPMs and the IAPMs would allow ownership of the project and pursue their interests while at the same time helping others in both groups to achieve their potential. "We all seemed to feel that this was a critical ingredient in the PCM process."

(5) Reciprocity. This was another factor which was considered by the IAPMs as essential for the effective development of the relationship and process. "Reciprocity is going to be a basic ingredient because it is important in the Chinese culture, and it is a vital element in the collaborative process."

(6) Cultural Sensitivity and the Development of Appropriate Relationships. It was understood from the very beginning of the project that "practicing cultural sensitivity throughout the relationship would help to preserve it." "We realize that the IEPMs were coming into an environment that was probably totally alien to them, a new country, completely different than they were use to."

"It seemed as though we would be parents again, but we would really be more like their brothers and sister."

Principal Observer

During the implementation phase of the relationship, the IAPMs provided an atmosphere that supported openness and faith in the decision-making process. This was seen as important because of the fluid environment that existed. This environment was characterized by the
continuing influx of information and the need to process it so that there was immediate feedback to the participants'.

To further illustrate the fluid environment that the participants were working in, one of the IAPMs used the following metaphor to describe the process:

What comes to mind is the flight of a spaceship that is traveling to the moon. We understand where we are going and how we are going to get there in the spaceship or PCM process. As we travel to the moon, we spend a large percentage of time making adjustment in the guidance system. Making these adjustments enables us to change direction so that we eventually get to our destination.

There were times that the process "bogged down" because there were so many opportunities to assist the IEPMs, and this became a problem. The IAPMs decided to be careful and not to accept too much responsibility, because they felt that they would become victims of all the possibilities. It seemed to be a question of what was realistic, based on the time frame and the original goals of the Mentoring Research Project.

The most salient feature of the IAPMs' relationship was that they worked together on a constant basis. Although this was not absolutely essential to the overall success of the program, it was deemed necessary, "because it was important to continually monitor the relationships, and the only way to do that was to take the time to do it." "We felt that we were working with a process that was unique to mentoring new international teaching assistants at American universities. It seemed only reasonable to spend the additional time to get to know the system and the people who worked with it." The IAPMs felt it was unfortunate that there were no
collaborative mentoring models for international students to work from in the literature," so the extra time spent working on the process became time well spent. Many of the dialogues that the IAPMs had were considered to be ping pong sessions. That is, ideas were continually bouncing back and forth in an effort to clarify and sharpen strategies and techniques. Everyone shared equally in the responsibility, authority, identity and energy. Asking for help in resolving issues was never the exception to the rule. The individual IAPMs did not function as separate entities but rather as a team in which everyone was expected to contribute.

Throughout the process, the IAPMs maintained their positive attitude by having the following:

- flexibility to be creative and innovative.
- an open forum to question and to receive feedback.
- access to one another on a daily basis.
- a nurturing environment which maintained the concepts of sensitivity, trust and honesty.
- respect for an individual's opinion, but the right to disagree.
- a strong belief in one another.
- a commitment to quality instruction.
- a belief in the possibilities of the PCM process.

More specifically, the IAPMs learned the importance of respecting the process that they were using with one another, and were to use with the IEPMs in the Chemistry Department. In the end, the socialization process was truly a process of support and assistance for the IAPMs. This process provides one of the key areas of discussion in Chapter V.
Why Did These Interactions and Reactions Take Place?

In response to this question, a review of the literature provided the following theoretical foundation for the socialization process experience by the IAPMs in this study. Socialization is based on the concept that novices or newcomers engage in activities with others from the environment to construct appropriate roles for themselves. The intent is to help the novices or newcomers carve out suitable roles that not only meet their individual needs but also adapt to the needs of the environment. When these arenas of socialization were applied in this study, it became apparent that both role socialization and cultural socialization took place.

Role socialization involved learning the functions, expectations, and requirements of a new role and developing an identity for performing that role (Sarbin and Allen, 1968). This occurred when IAPMs were adjusting to the new teaching environment.

Cultural socialization explores the practices and attitudes of the department, along with other elements of the university (Sarbin and Allen, 1968). When mentoring international teaching assistants, cultural socialization also meant developing an understanding of this student population. Cultural socialization also refers to ways in which the delivery of information becomes an effective tool of cross-cultural communication in the classroom. In essence, this refers to cultural sensitivity, pacing and selecting the appropriate words that convey the message.

In general, the process of role and/or cultural socialization occurs through communication. It involves instruction and the development of a support system (relationship) which allows IEPMs and IAPMs to share their fears, concerns, questions, and successes. This relationship was based on
interactions which were primary to building a nurturing and supportive environment. This support system assisted the IEPM mentors in becoming less dependent and more independent.

Socialization also produces an active atmosphere in which brainstorming, sharing ideas, and exchanging perspectives became a common practice. In Darling's (1988) study, brainstorming sessions occurred whenever there was a problem with instruction or research. The peer collaborative mentors found that brainstorming allowed them the opportunity to vent their feelings, provide direction, and exchange their ideas. In essence, this type of dialogue helped define problems and issues more clearly.

**Dynamics of the Peer Collaborative Mentoring Process**

The PCM process was clearly a synergistic relationship. That is, the effect of the PCM process could only be achieved through a collective effort. The IAPMs and IEPMs felt that they drew a great deal of strength, knowledge and skill from one another. Clearly, the IAPMs and IEPMs were very sincere in developing a relationship where all of the participants were encouraged and involved.

**IEPMs Observations**

The IEPMs saw their main task as developing their language and instructional skills. As one of the IEPMs noted:

> This was a time for us to learn about the American university and what the students expect. I think that we must work very hard to learn the language and to motivate our students. It is our responsibility to make our students successful, so we must try to improve ourselve.
It was only after the term had begun that the IEPMs and IAPMs generated a list of suggested skills that the IEPMs needed to work on. Most of the skills that were identified dealt with pedagogy and language development. The following is an example of skills and issues that were addressed by the IAPMs on behalf of the IEPMs. Many of those skills and issues that are identified matched a needs analysis conducted with the Chemistry Department Head prior to the implementation of the PCM project.

These skills included:

1. Question and answer skills.
2. Using the chalk board, where to stand, talking to the board while writing, writing legibly.
3. Utilizing overhead projectors in place of the chalk board as an alternative style of presenting information.
4. Pacing the oral and written presentation, writing key words on the board or overhead.
5. Conducting information checks with students to see if they are grasping the information.
6. Developing paraphrasing skills to better understand students.
7. Facilitating suggestions which would help the undergraduate students to develop skills necessary for working in a cross-cultural environment.
8. Developing a general profile of the typical undergraduate student at Oregon State University (so that IEPMs might have a better understanding of their students).
9. Developing and implementing student evaluations.
It was during this period that the IEPMs were asked about their perceptions of the undergraduate audience. The conversation that ensued was quite lengthy and was part of a continuing dialogue that lasted throughout the term. The following list of quotes are characteristic of the IEPMs perceptions of American undergraduates. Additional quotes are provided in Appendix E.

"We think that the American students are very lazy. They do not want to work as hard as students in China."

"Fewer people are accepted into the university, and it is more difficult for students in China to get into our university."

"Americans' math skills are not very good. In China we do more exercises than the Americans do."

"American students like to play around."

"American students seem to rely on their calculators, computers, and chemistry tables more than the Chinese students."

"There are many different majors in Chemistry, that is unusual."

Because of the comments about American undergraduate students, the IEPMs were given several articles on American undergraduate students which they were asked to read. The premise behind the use of discussions and handouts was to help the IEPMs understand the perspective of the students that they were teaching.

After the IEPMs had read the handouts and discussed them with the IAPMs, the following observations were generated about American undergraduates by the IEPMs. "I think that there is difference in the type of
learning that takes place in America. Here the students require that a teacher motivate them. We do not worry about that in China." It is also true that, "We [IEPMs] need to be more flexible in the way we teach." "If a student doesn't like the way I teach then he will come to me and tell me so."

Another IEPM said, "I think it would be helpful for my students to understand my country. They would see that our education is difficult and why we must study so hard." "Maybe if they understood that only one tenth of one percent of high school students go to the university, they would understand why we must work so hard."

The IEPMs saw the undergraduate students as independent and willing to ask questions and interrupt their professors in order to address a particular problem. Originally, the IEPMs saw this as an act of student defiance or lack of respect. After discussing this cultural issue, the IEPMs recognized that in the U. S. this behavior is consistent with that of an undergraduate who may be inquisitive and interested in obtaining clarification on a particular point.

The IEPMs still viewed many of the students as lazy because they observed that students chose "not do their homework" and would rather "have fun and go to parties." This was a consistent theme for the IEPMs during the PCM project.

Finally, the IEPMs saw an American undergraduate as someone who needed to understand what it's like to teach in a foreign country. Undergraduates are "too impatient at times" and needed to see that "we struggle too while we are in America." "We really do like the students and many try very hard to be successful, but I think that we are the same in China."
IAPMs Observations

Throughout the project, the IAPMs reported that they felt privileged to have the opportunity to collaborate with the IEPMs. They felt that they learned a great deal about the techniques and strategies that were employed by the IEPMs at an American university and the difficulties they face as foreign TAs. The IAPMs saw the IEPMs as extremely hard-working and excited about teaching chemistry. They also found the IEPMs to be very helpful in teaching them about Chinese culture and their methodology of teaching chemistry.

In developing a strong working relationship with the IEPMs, it was important to maintain a low profile and intensity level. The IAPMs were concerned that overload (i.e., giving too much information at a time) may very well be a problem that the IEPMs would have to overcome. To overcome this potential problem, the IAPMs were selective about the type of information that they provided to the IEPMs. This process became a valuable ally for the IAPMs and one that was utilized throughout the PCM project.

Facilitative listening also became an active ingredient which both sets of participants practiced from the very beginning of the relationship. IAPMs worked on developing listening skills and breaking the habit of talking rather than listening.

It wasn't that we weren't good listeners; it was that we were always so excited about providing our new friends with information, that we, at times, talked more than we listened. I felt bad when this happened because it seemed as though our monologue was at the sufferance of the IEPMs.

The IAPMs found that they had to listen very closely, not only to what was being said but the context in which it was being used. It was not unusual
to paraphrase what the IEPMs said in order to insure the accuracy of the statement. For the IAPMs, paraphrasing became a very useful tool.

Principal Observer

The IEPMs didn't feel that they could offer any assistance to the IAPMs during the first two weeks of the project. Their rationale was based on the assumption that as newcomers to the environment they had little to contribute. It was only after their second meeting that the IEPMs began to understand the potential significance of their contribution to the IAPMs. It was at that time that the IEPMs began offering numerous insights into the Chinese culture and educational system. Their willingness to assist the IAPMs in expanding their cultural horizons through observation, interviews and informal conversations and contributed greatly to the success of the PCM process. The following examples illustrate the collaborative contributions made by the IAPMs and the IEPMs as a result of their participation in the study.

Because both sets of participants made a decision to contribute to the relationship, the level of confidence and satisfaction began to grow. It was not a matter of having to do less work because of the "team effort." It seemed that both IAPMs and IEPMs had to stretch their knowledge and skill level in order to provide for quality instruction and professional growth. As one IAPM noted, "it was a time of giving and receiving. Everyone seemed to benefit from the presence of the other."

During the PCM project, leadership patterns or styles of the participants were very similar. They were informal and collegial when working with one another. This phase (Empowerment by Collaboration Phase) of the relationship was characterized by a supportive and caring environment
which sensitized the participants to the nature of the PCM process and to one another.

Both sets of participants valued the process of speaking clearly and at a slow pace. "It was important to choose their words carefully and maintain a slow pace; when this occurred, the conversation usually went pretty well."

Despite the value of the above process, it was also a very unnatural process for the IAPMs. To better illustrate what they were talking about, one of the IAPMs used the metaphor of a downhill skier.

This process is really unnatural for me. It feels like when I first began to downhill ski. The instructor told me to lean downhill and to not turn the upper part of my body, only the lower half. As I picked up speed, I began to sit back on my skis, instead of leaning forward, which would help me to control my speed and direction. I also used my entire body to change direction, I mean that's what I would normally do if I were running or walking. This was difficult for me throughout the project.

All IAPMs agreed that this metaphor described their uncomfortable feelings. It was difficult to think continually about what you were going to say and at the same time slow the pace. Although it did feel uncomfortable at times, it was a necessary part of the environment that they were trying to create.

**Why Did These Interactions and Reactions Take Place?**

The socialization process identified in the previous section helps to clarify question of why the interactions and reactions took place. This process provided an atmosphere in which the IEPMs and IAPMs acted as cultural mediators for one another so that there was a better understanding between cultures. It also provided an environment in which roles were clarified and
skills were sharpened. Furthermore, the process provided the impetus for the discussion on socialization and culture in Chapter V.

**Gender**

In collaboration and mentoring programs, gender may be considered a potential issue. Although all of the IAPMs knew that there might be a potential problem, the issue of gender never jeopardized the relationship. To better illustrate the position of gender in this study, the following observations provide a description of the interactions that occurred between the female peer mentor and the IAPMs.

**Observations of the Female Peer Mentor**

It was clear that the female IAPM had "a strong feeling" that the IEPMs were "considerate of all the IAPMs." She felt as though she was a "respected member of the team (IAPMs) and did not feel that she was at odds with the IEPMs at any time." However, at midpoint in the study, she began to notice that the IEPMs seemed to maintain a more formal relationship with her almost all of the time, while at the same time becoming more informal with her male colleagues. She made the comment that "it seemed as though it was much easier for the IEPMs to joke with the male IAPMs." The female peer mentor continued to see that "they [IEPMs] were more informal with the male IAPMs, they were very close friends." "I didn't feel as though they felt real comfortable with me as a close friend." "It seemed as though there was this invisible wall that I couldn't cross even though we had an equal relationship." In a final comment the female IAPM shared the following insight, "it wasn't that I wasn't their equal or was looked down upon, as much as it was a difference in the cultures." That is, the IEPMs belief about
the female IAPM was a function of the cultural environment that they came from.

Observations by the IEPMs

When the IEPMs were asked how they perceived their relationship with the female peer mentor they professed a great deal of respect for her because "she was the only female mentor" in both groups. They felt that "she must be very special because she is very talented and bright." "To be chosen to participate in this research, must be very important." "I think what the female IAPM has to say has value. She is sensitive to us and answers our questions." And finally, "she does not talk so much, she listens, which is important."

The IEPMs considered "her to be a very professional woman, it is important to keep a professional relationship with her." "It is important to develop our skills. She helps me a great deal to become a better teacher."

Observations by the Principle Observer

After questioning the IEPMs about the issue of gender, it became clear that it was important for the IEPMs to maintain a somewhat formal relationship with the female peer mentor for four reasons. First, she was a woman who was not a member of their family or extended family. Therefore, a formal relationship was the only relationship perceived to be possible. Second, the IEPMs believed that joking around with a female mentor was unacceptable, especially if she was alone. There were times, however, when the IEPMs did joke with her when she initiated this kind of exchange. Third, the IEPMs believed that because they were not from the United States, they didn't not feel personally comfortable with the informality of relationships between men and women in the U.S.. Although
they believed that it was appropriate for this type of relationship to exist in the American culture, they stated that this was unacceptable in the Chinese culture. They stated that, if behavior of this sort did occur in China, it would be assumed that the two people were in an intimate relationship. Because of their unacceptable overt behavior, they would be ridiculed and ostracized. They also explained that women in China were not as independent as men and therefore did not have as much flexibility in relationships. Finally, several interesting comments were made by some of the IEPMs concerning their perceptions about the behavior of some women in America.

"We have heard stories about how some American women are strong or aggressive."

"We must be careful of these people."

"I would not like to be around someone like this. I think that I would feel very uncomfortable."

"I don't think that I would be very happy."

In conclusion, the issue of gender was one cultural perspective of how conflict is translated and communicated as cultural values and behavior. Chapter V will examine xenophobic attitudes that existed in this cross-cultural environment.

**Why Did These Interactions and Reactions Take Place?**

In responding to the question of why these interactions took place during the PCM process, the following observations can be made concerning the gender issue. First, socialization models are particularly useful for
understanding gender differences and the development of formal or informal relationships.

Socialization is a two-fold process; from the perspectives of the group, socialization is a mechanism through which new members learn values, norms, knowledge, beliefs, and the interpersonal and other skills that facilitate role performance and further group goals. From the perspective of the individual, socialization is a process of learning to participate in social life. (Mortimer and Simmons, 1978, p. 422)

Barriers to professional growth often occur when problematic elements invade the individuals environment, or when cultural or social issues tend to compound a problem. In these situations, differences in perception and life experience cannot be ignored.

Language

English Language

Throughout the course of the PCM project, the problem most often identified by IEPMs and their students was that of classroom communication. Specifically, students and IEPMs were concerned about the IEPMs limited vocabulary and their ability to pronounce words correctly.

Students

In general, the students seemed to feel that there was a problem with the IEPMs' ability to communicate. In a series of interviews with students, the following comments were obtained. These reflect the nature of the language problem.

"You can't understand him, and he can't understand you."
"He is unsure of how to help us understand and doesn't understand the language enough."

"[I had] difficulty understanding him sometimes, but O.K if you listen closely and he talks slowly."

"He can't understand us and doesn't communicate well. We spend much of our lab time trying to understand."

"He often doesn't understand questions unless very specific and to the point."

"Uses some terminology that's difficult to understand and sometimes just expects us to understand."

"Hard to understand language."

"Sometimes hard to understand."

"Sometimes he is a little hard to understand. Most of the time he is a great TA."

"Cannot understand what he says. Goes too fast, always confuses me before we even get to the lab part, once working on lab, he's great."

"Not able to speak English fluently, struggles, but tries very hard."

"Poor communication skills, can't relate with students very well."

"It's hard to understand what he says back to us. He could explain things a little better."

"Language, hesitant in instructing and answering questions. Need a TA who is very confident and easy to understand. This stuff is hard enough without a communication problem."

"Of course language is a weakness, but I admire the courage it takes to not only study in a foreign country, but also to teach in a foreign language. My only problem is probably one of all TAs and students, in that it is assumed students understand a lot more than they do."
A small number of students believed that the TAs were doing an excellent job as instructors. They felt that their TAs' communication skills were very good, especially since they were not speaking in their native tongue. After further questioning, the following elements emerged: These students had a good understanding of the language of chemistry, acknowledged the value of the cross-cultural experience, and were culturally sensitive to the TAs. They were not struggling as much as others who felt that their TA was doing a poor job of communicating. Students with a positive perspective also had a great deal of empathy for their TAs. According to one student,

"I know the language is difficult for him, but he tries so hard to make us understand and he does a good job."

"I can't imagine how difficult it would be for me if the tables were reversed and I was the instructor in China."

IEPMs

The IEPMs felt that they were working very hard to achieve an understanding of the English language, but they felt that they

"Still have much difficulty understanding the language, not because it is difficult, but because it is new to us and we have only spoken the language for one or two years."

"We work very hard to pronounce the words correctly, but it is difficult sometimes. I must think about what is said so I can say the appropriate response to the student."

All of the IEPMs felt that

"It was important to go slow for the students so that they would not have difficulty understanding what was said."
"When I speak clearly, then the students will have fewer questions."

From the beginning of the PCM process, the IEPMs worked at speaking clearly, not only when talking to a student one on one, but also in lecture settings or talking to small groups of students.

Language of Chemistry

The language of chemistry was the second component of the language triad. After interviewing and observing the IEPMs working with their students, it became clear that the language of chemistry was also going to be an issue.

IEPMs

The IEPMs knew that most the students were not interested in careers in chemistry, in fact, most the students who were in the Chemistry 105 labs were not majoring in the discipline.

"A few of the students had taken chemistry in high school, but this was their first time the students had taken chemistry at the university."

"Part of the students' problem is the language of chemistry was unfamiliar to most of the students."

Chemistry was a foreign language to many of the undergraduate students. The IEPMs knew that many of the students had "very little background in chemistry." The IEPMs had difficulty understanding why the students "were not better prepared for their laboratory and recitations." They felt a strong obligation to help their students understand the subject, but often were disappointed because of their students' lack of preparation and perceived lack of desire to learn the subject.
Students

After selecting a representative sample of students from each laboratory, it became clear that they were "frustrated" by their TA's knowledge of the subject. Recitation sections were described, in general, as "difficult to understand."

Principle Observer

Although the students did have some minor reasons to complain about the language capabilities of their TAs, they overlooked two important factors. First, most students were not prepared for their laboratory assignment. Second, the students had difficulty understanding the language of chemistry because they had very little exposure to it prior to attending the university.

In talking with a selected number of students about the issue of laboratory preparation, it was interesting to find that the students normally prepared for their labs sitting in the hallway before class. One student's comments seemed to mirror a large number of her classmates' feelings about preparing for the labs.

Just before class, a bunch of the students get together and read the material assigned, it's probably not the most effective way to understand the material. I guess most of the time we spend is really cram time.

None of the students reported that they thought that this lack of preparation made it more difficult to understand the IEPMs. Yet, many of the students felt stifled not by the TA, but by the language of chemistry. Several students said that they "were reticent to ask questions" in class because they had "a difficult time understanding chemistry." For some of the students,
asking for the answer before they solved the problem was a less strenuous method of getting the answer. It was a way of "cutting corners" and was certainly "the shortest distance between two points." None of the students reported any perceptions that their unfamiliarity with chemistry inhibited their communication with IEPMs.

In summary, after twenty-three interviews and observations with students, several factors emerged which stifled learning: (1) The imposition of a required course. Many students felt that this was the type of course that they would most like to cut. (2) Lack of subject interest: most of the students in the Chemistry 105 labs were not chemistry majors. Many were not interested in the subject. Furthermore, many of the students were not willing to spend the time preparing for their labs because they saw no use for the information in their careers. (3) Difficulty with the language of Chemistry: the vocabulary in chemistry was difficult, at best, for many of the students. (4) Language proficiency: the TAs were extremely knowledgable about Chemistry but had a limited English vocabulary, which made communication arduous for the IEPM and the students. (5) Xenophobia: there was an element of xenophobia that contaminated the educational environment. This element will be discussed at length in Chapter V.

Cultural Values Expressed Through Language

The final component of the language triad was cultural values that were expressed through language. This form of cultural expression was more subtle than the other two language components. IAPM observations during the labs and recitation sections didn't really begin to identify this type of language until the seventh week of the project.
Asian Students

When seven Asian students from Taiwan and Mainland China were interviewed about their difficulties in taking Chemistry; they responded by saying that

"The training many of us received in our schools was more difficult than in America."

"I think we are better prepared because maybe we have more discipline in our study habits."

"We work very hard because of support we have from our family and government. It is very important to us."

The Asian students, for the most part, acknowledged that their "TA expected more from us because we are from the same type of educational system."

IEPMs

The IEPMs also acknowledged the fact that they expected more from their Asian students than the other students. Accordingly, they did not expect the Asian students to ask for as much help as the American students. After observing the IEPMs working with their Asian students, the following comments were indicative and typical of statements made to Asian students.

"You should know this, I should not have to explain this to you."

"I think that you understand the importance of studying, you are Chinese."

"You should understand how to do this experiment; you have done experiments like this in your school."
"I expect more from you than I do the other students."

"You should not be asking me these questions; you should know the experiment."

**Principle Observer**

Initially, the IAPMs were not aware of the existence of cultural values expressed through language. Gradually, the IAPMs began to notice a difference in the working relationship between the IEPMs and Asian students in the labs. One of the IAPMs began to notice that "the Asian students seemed to need less assistance than the other students." For the most part, there seemed to be less flexibility given to Asian students than to the other students in the laboratory sections.

The following key points emerged when analyzing the effects of the language component:

1. When IEPMs were besieged with questions from students, it became difficult for them to process the information quickly and respond to the questions.

2. In recitation sessions, the IEPMs were normally "pushed for time." They made every effort to get their students from the recitation to the lab so they could begin their experiments. Unfortunately, this was sometimes at the expense of the quality of presentation. That is, "the IEPMs lectured too fast, not enough time for questions, and too much for the students to effectively write down in the time allotted."

3. One-on-one dialogues worked very well. Most of the time students would slow their speech down in order to communicate more effectively with the IEPMs.
(4) The IEPMs were usually very aware of the need to maintain a slow pace in talking with students. They understood the importance of choosing the appropriate vocabulary to explain a particular problem to their students.

(5) Students suggested that their problem with Chemistry stemmed from the IEPMs' inability to communicate effectively in English.

(6) The IEPMs seemed to be "victims of circumstance." That is, they were expected to have the linguistic skills to communicate the language of chemistry, when in fact, a number of students were not competent in the language of chemistry, let alone the Chinese Americanized dialect.

(7) It was interesting to hear students talk about their TAs, especially before their classes had ever met. Most students commented that as soon as they found out that they had a foreign TA, they wanted to withdraw from class because they knew that they would have language problems which would hamper their success in class. They did not know who the TA was, but that didn't make a difference. They were biased. Their xenophobia was evident in the disregard they felt for the TA. If the TA was "foreign," many students believed that the TA did not possess the skills necessary to effectively teach chemistry, let alone teach at an American university.

Why Did These Interactions and Reactions Take Place?

Given the setting just described, the undergraduate students usually assumed that the IEPMs were to blame for problems, because of the TAs low level of proficiency in the English language and because they were newcomers to the United States. While it is possible that certain IEPMs may have needed more assistance in developing their language skills, it is also possible that many undergraduates lacked the cross-cultural skills to communicate effectively with their IGTAs.
The critical issue that needed to be addressed was how to develop effective communication between undergraduate students and non-native speakers of English (TAs). Depending upon the situation, a mismatch of players may suppress the quality of the teaching environment in the classroom. The mismatch can best be described in the following ways, as depicted in Figure 7.

(1) The TA's general expectations of what happens in a university classroom may not match those of the students. The students' expectations of the TA, may not match the TA's capabilities.

(2) TAs' specific, imported standards, that is, what they think they can expect from students may not match the students capabilities. (Shaw and Garate, 1984, p. 27)

Figure 7. Three Unbalanced Equations in the Relationship of U.S. Students and International TAs
Figure 7 illustrates the potential difficulties that exist for both the international teaching assistant and the undergraduate student at an American university. Shaw and Garate (1984) and vom Saal (1987) suggest that prior to college both the students and foreign teaching assistants may have spent much of their lives in a single city or town with friends that they have interacted with for years. These friends often have a similar background and also have common cultural understandings. Upon leaving their home, family, and friends to attend college, both are exposed to an environment that is foreign to them. At this point the undergraduate and IGTA "cannot depend upon shared backgrounds to fill in the gaps" as demonstrated in Figure 8 (p. 276).

American High School Teachers and Peers
American University Professors and Peers
American Elementary Teachers and Peers
International Teaching Assistants
Immediate Family
World

American undergraduate's shared world offers an opportunity to learn more and more complex communication skills.


Figure 8. Continuum of Shared Background
Undergraduates in classrooms with international TAs can be compared to beginning language learners who are trying to make sense out of a new language environment. It is likely that they go through some of the same stages as second language learners. They have great need for context in order to look for redundancy that clarifies the message. (vom Saal, 1987, p. 276)

The intercultural classroom is an especially sensitive environmental system, especially with the mixture of cultural talents and backgrounds. Both undergraduate students and international TAs are responsible for improving their communication skills in these intercultural classrooms. It is not only fundamental to the type of communication that takes place in the classroom but basic to the cultural environment.

Phases of the Peer Collaborative Mentoring Relationship

Like most developmental relationships, the PCM relationship proceeded through a series of developmental phases, which is illustrated in Figure 9. Analysis revealed the identification of the following phases: Induction Phase; Empowerment by Collaboration Phase; Reduction Phase; and Termination Phase. The following is a description of the various phases as seen through the eyes of the principal observer.

Induction Phase

The induction phase was the initial interaction phase of the relationship. It began prior to the first meeting with the IEPMs and continued into the second week of the project. This phase of the relationship began with the decision by the IAPMs to participate as equals, regardless of their previous teaching experience, and to help participants in the project seek their potential. This was a testing ground for the IAPMs
Figure 9. Peer Collaborative Mentoring Phases

to deliver quality information and skills to the IEPMs, both individually and as a group. It was also time to develop trust and to develop a commitment to one another and to the project. During this phase there was a positive identification with other mentors and with the type of support that would be provided. As one IAPM noted,

We really made an honest effort to provide an atmosphere where everyone felt comfortable. It was difficult at times. At the beginning of the relationship, the IAPMs seemed to be more concerned about how they could help the IEPMs and not about how the IEPMs could help them. It was interesting.

Even at the beginning of the relationship, we all felt as though we had a common bond between us, a shared interest in providing students with a quality education. I guess this was really the starting point where we all felt real comfortable. During this phase of the relationship we joked a lot about
some of our experiences and that minimized any tension that the IEPMs might have felt.

In retrospect, the IAPMs and IEPMs were developing roles to meet their individual needs as well as the needs of the PCM process.

**Empowerment by Collaboration Phase**

This phase, began at the third week and extended into the ninth week. As the mentoring relationship continued to unfold, each individual began to develop vested interests. This phase of the relationship was, by far, the most active phase of the PCM relationship. New ideas were transmitted and analyzed for their potential contribution to the labs and to the PCM process. Problem-solving became a way of life for the IAPMs and most of the IEPMs. Concepts and skills were tested in the classroom to increase the quality of life for the IEPMs, IAPMs, and students. This, in effect, was a refinement stage that was characterized by analysis, evaluation and synthesis of knowledge and skills appropriate for laboratory application.

IEPMs and IAPMs also began to develop their peer mentoring and collaborative roles. These roles might best be described by two descriptions that were provided by two of the IEPMs.

I think we work very well together. We try to help each other in many ways. I feel that we are friends, and we try to teach each other so that we learn and can be better at teaching the students. I think that we have helped our friends to understand Chinese culture and how we teach. This has been very helpful to me.

I enjoy working with the IAFMs; they are so interested in developing their teaching ability and their speaking and pronunciation skills. We all try to provide the kind of assistance that would help them further develop their talents. It seems that throughout this whole process everyone has
contributed an equal share and is very interested in the professional development of the other person. This is truly a collaborative setting that breeds quality control with imagination. This type of relationship is inspiring, plus the fact that we have some great friends. Life just doesn't get any better than this.

During this phase of the relationship, one of the IAPMs suggested that, "it was a time of understanding the kinds of things that you did and didn't do with one another." Both sets of participants recognized the expertise that members carried to the project and the importance of trusting that expertise. There was no authority figure in this relationship the participants maintained their identity. In essence, it was an ecological system that was concerned with how the participants functioned in the classroom environment and how the quality of the environment might be increased through professional development.

**Reduction Phase**

The reduction phase was marked by a slight alteration of the PCM relationships. This phase of the relationship began in the eighth week and continued until the termination of the project. The intent of this phase was to have the IEPMs working on their teaching techniques without additional directions from the IAPMs. IAPMs noted that many of their suggestions had been implemented. There was very little constructive criticism of lessons because the suggestions by the IAPMs had been implemented. The IEPMs felt more autonomous in their laboratories and more confident about their ability to teach in an American university. The reduction phase for the IAPMs was also marked by emotional separation.
We knew that the time was coming when we would not be working with our friends and that was upsetting to us. We had invested a lot of time and talent into something that we really believed in and now it was almost at an end.

I really hated to see this project end. It hurt knowing that we would not only be spending less time with the IAPMs, but we would each be going our own way; that was sad. It seemed like we developed such a close relationship, and we always seem to know what the other person was thinking. It was just like a family; we shared time, conversations, personal and professional goals. It was hard to see it all come to an end.

During this phase of the relationship, there were three roles that were seen as important by both IAPMs and IEPMs. The first role was the role of supporter. Typically, they saw this role as an opportunity to encourage one another and to provide positive feedback, even if the lesson did not go as well as expected. As a supporter they felt a responsibility to listen carefully to one another. As one IAPM observed, "I always tried to be an active listener with the IEPMs; it was important to understand the meaning behind the words." Another IAPM shared that, "It was important to listen, sometimes I am slow and I don't hear correctly. It is of value to listen carefully." Everyone understood the value of a supportive relationship because of the frustrations that were felt at different times during the study. This role also minimized the isolation that some of the IEPMs had been feeling, "They were not alone, someone was always in their corner."

The second role which characterized the relationship was the role of advisor. This role usually provided the participants with advice on personal and professional topics, ways of avoiding specific problems, different methods of communicating with students, and teaching techniques and strategies.
Finally, it was characteristic in this phase to see increase in professional growth through the role of collaborator. It was also during this phase that the IEPMs asked the IAPMs to share their perspective of their (IEPM's) performance. The following description is the summation of that American perspective.

Typology of the IEPMs

All of the IEPMs were competent in their subject matter. They could solve the students' homework problems and lab problems without much difficulty. Typically, a recitation or lab would include a demonstration, an explanation of a particular problem, a discourse on problem-solving, and paraphrasing. The IEPMs were generally helpful, encouraging and friendly to the undergraduates. Sometimes there was levity by three of the five IEPMs.

The tone of their classes was business-like, and there was little waste of time. For the most part, the IEPMs were in control of the classroom with little distraction from the students. The IEPMs could be heard easily and were understood by the IAPMs most of the time. IEPMs constantly paced themselves and chose their words carefully. One of the TAs did have a tendency to "speed" while lecturing and when he was running out of time. IEPMs shared very little personal information (i.e., family relationships, health problems) with students but did offer encouragement and positive reinforcement. They tended to direct the class and lab interaction, as opposed to facilitating interaction through discussion or question and answer periods. The IEPMs maintained a formal style of classroom discourse.
Termination Phase

The final phase of the PCM relationship was marked by the physical separation of the participants as the project terminated at the end of the twelfth week. In part, it was a time of rejoicing because the participants had developed friendships that would last for some time.

We felt as though we may have been physically separated, but we were not emotionally separated. This experience was one of the most enlightening programs that I have ever been involved in. It taught me a great deal about patience, listening, cross-cultural communication, friendship, nurturing and the importance of being committed to something you believe in.

This phase of the relationship redefined the roles that the IEPMs and the IAPMs would play in the future. The relationship was now based on a different set of rules, those of friendship rather than professional development. Levinson's (1978) conclusion is that much of the value of a mentoring relationship may be realized only after it ends or changes. For the IAPMs and IEPMs, Levinson's conclusion appears to be correct.

Finally, the termination phase evidenced the transformation of the participants. That is, the IEPMs now possessed additional teaching strategies and techniques which enabled them to provide a quality instructional environment. The IAPMs were provided with a view of teaching from the Chinese perspective which provided cultural enlightenment. Furthermore for both groups, it was an opportunity to function as peer collaborative mentors and to use this process as an alternative to traditional methods of professional development.
Why Did These Interactions and Reactions Take Place?

According to Bandura (1977), "learning the ropes" in a developmental relationship usually encompasses a form of self-efficacy. There is a belief that one's capabilities will increase with time and in the presence of another, who is passing on those skills and knowledge necessary for professional development. Entering into a developmental relationship acknowledges a need for renewal (i.e., the need for developing new relationships). Erikson (1963) suggests the value of such a relationship. Through empowering others, we empower ourselves. Levinson et al. (1978) also acknowledge the concept of renewal and believes that developmental changes will occur over a period of time, although he does not identify specific stages or phases.

Kram (1983) has made a further contribution to explaining developmental relationships in mentors and proteges by identifying a series of four phases (i.e., initiation phase, cultivation phase, separation phase, and redefinition phase) that such relationships go through over a period of time. The four phases are:

[A]n initiation phase, during which time the relationship is started; a cultivation phase, during which time the range of functions provided expands to a maximum; a separation phase, during which time the established nature of the relationship is substantially altered by structural changes in the organizational context and/or by psychological changes within one or both individuals; and a redefinition phase, during which time the relationship evolves a new form that is significantly different from the past, or the relationship ends entirely (p. 610).

The phases that Kram described in her study substantiate that the development of certain types of relationships are shaped by the participants' needs and the socialization process. As needs are met and socialization of the
participants advances in increments, so does the developmental process and the professional development of the participants.

Benefits of the PCM Process

The most striking result of questioning the IAPMs, IEPMs and students about benefits was identification of the value they perceived in the interactive process. Everyone agreed that it was personally and professionally uplifting. Each participant saw himself/herself as a primary beneficiary of the PCM experience and was willing to help the others achieve their desired goals. Without really thinking about the consequences (benefits) of their actions, both sets of participants relied heavily on the collaboration process to resolve issues they encountered. Although reciprocity had been a theme from the very beginning of the project, it also became a very natural process that was recognized as an important ingredient. A direct benefit of the concept of reciprocity was that both groups of mentors were provided with a guide for professional development that could be utilized in other activities. They also saw the value of collegial interaction as a necessary element in this process.

The following descriptions of benefits and detriments from the perspective of the IEPMs, IAPMs, and undergraduate students are verbatim responses. These statements are characteristic of how the participants felt about the PCM process in this study.

<table>
<thead>
<tr>
<th>IEPM Perceived Benefits</th>
<th>IEPM Perceived Detriments</th>
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<tbody>
<tr>
<td>&quot;Importance of being a good teacher.&quot;</td>
<td>&quot;Did not feel that the IAPMs had enough time to work with me because of conflicts in schedule.&quot;</td>
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</tbody>
</table>
"Meeting new friends."

"I wish we could spend more time talking."

"Learned new ways to teach in an American classroom."

"Understand American students a little more."

"Evaluation by my students was helpful."

"Learned to use the overhead projector."

"Provided a good role model."

"Develop self-confidence."

"We were treated with respect."

In a conversation with the IEPMs after the project had terminated, the principal observer was struck by a comment made by one of the IEPMs. This comment was further testimony of the benefit of PCM and captured the value of the project.

I appreciate the value of what you [IAPMs] have done for us. I think that if we did not have this project that we would not have the opportunity to improve our teaching and to help our students. I also like that we are friends . . . . . .

I enjoyed sharing and helping a friend to learn about my country.

This IEPM was reflecting upon what would have happened if the PCM process had not existed. In retrospect, it seems that the real benefit of the project was the project itself and what it had to offer all of its participants. The project also helped to identify problems and weaknesses as perceived by IAPMs and students.
<table>
<thead>
<tr>
<th>IAPM Perceived Benefits</th>
<th>IAPM Perceived Detriments</th>
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<tbody>
<tr>
<td>&quot;It's great to meet new friends.&quot;</td>
<td>&quot;Time constraints were a problem.&quot;</td>
</tr>
<tr>
<td>&quot;Collaborate on techniques to help our new friends.&quot;</td>
<td>&quot;Emotionally worn out.&quot;</td>
</tr>
<tr>
<td>&quot;Excellent role models.&quot;</td>
<td>&quot;There were a small group of students that were not sensitive to the IEPMs.&quot;</td>
</tr>
<tr>
<td>&quot;Rejuvenated me professionally.&quot;</td>
<td>&quot;Not enough time to observe.&quot;</td>
</tr>
<tr>
<td>&quot;Provided us with a great deal support.&quot;</td>
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<tr>
<td>&quot;Reinforced my identity.&quot;</td>
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<table>
<thead>
<tr>
<th>Student Perceived Benefits</th>
<th>Student Perceived Detriments</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;It felt like the chemistry Department cared about me.&quot;</td>
<td>&quot;Not sure that they'll put the suggestions to use.&quot;</td>
</tr>
<tr>
<td>&quot;Like to evaluate the TA before the end of the term.&quot;</td>
<td>&quot;Still have a hard time understanding my TA.&quot;</td>
</tr>
<tr>
<td>&quot;Appreciated being able to say what I want about my TA.&quot;</td>
<td></td>
</tr>
<tr>
<td>&quot;I think it would be a good idea to do evaluations two or three times during the term.&quot;</td>
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<tr>
<td>&quot;Now that I know that they are trying to do something, maybe I should have more patience.&quot;</td>
<td></td>
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<tr>
<td>&quot;Instead of ignoring what he is saying, maybe I need to ask more questions.&quot;</td>
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Observations of the Principal Observer

Although there were very few detriments or limitations reported by the IEPMs during the study their response may have been influenced by the following reasons: (1) IEPMs may have felt that it would have been impolite to criticize the project or any of the IAPMs; (2) IEPMs could have been encouraged to participate in the project by the administration, to the point, that they felt obligated; (3) the IEPMs may have felt an obligation to be supportive because of the dominant culture; and (4) IEPMs may have asked to be involved in the PCM project, because they felt having American graduate students who had teaching experience may have caused them to feel reticent to suggest weaknesses.

Although these speculations exist about the possible detriments, the IAPMs still felt that their relationship with the IEPMs was very positive. Their primary concern was the lack of time that the IAPMs were able to spend in observing the IEPMs and the students in their laboratories. They felt that because of their own schedule of classes and teaching responsibilities, the time spent with the IEPMs was limited due to schedule conflicts.

After interviewing students and reading their evaluations at the midterm and at the end of the term, it became abundantly clear that a few of the students' attitudes had not changed concerning the TAs' ability to communicate effectively. However, the IAPMs noticed that more students were willing to compliment their IGTAs at the end of the term in comparison to the number of compliments given in the midterm evaluations. For example, one of the compliments took the form of acknowledging the slow pace the TAs used in lecturing. It was interesting to observe the positive shift in the students' attitudes towards their IGTAs. They were beginning to notice the positive features of their IGTAs or, at least they became more verbal about
it. Students were making a more conscious effort to listen to their IGTAs and to apply some of the suggestions that were given to the IGTAs by the IAPMs. These suggestions provided guidance for the students in helping their IGTAs to teach more effectively. Above all else, the students really appreciated the opportunity to evaluate their IGTAs throughout the term, as opposed to the single institutional evaluation given at the conclusion of the course.

The IAPMs felt that since this was a short-term project, the best approach was to help the IEPMs work on their classroom strategies and techniques. Although the language problem remained, the magnitude of this problem was decreased by the efforts to improve the teaching techniques in the classroom and laboratory. It was interesting for the IAPMs to see that the greatest potential cost of collaboration for one of them was extracted after the project had terminated.

I was really frustrated, because I knew that after the project was going to end, no one else was going to continue on with the program. What a great opportunity to help others as well as helping yourself. I remember reading a quote someplace that said "Nothing has more power than the human soul on fire." To me that's what it's all about, commitment to principles that you believe in and the ability to see the potential that exists in the process.

There were, of course, other benefits that existed beyond the individual benefits. There were payoffs for the organization, that is, the Chemistry Department. The Chemistry Department Head and the IEPM supervisor felt that the payoff should include developing a support group with the department that would act on behalf of the IGTAs. It would also allow the department to maintain a program of quality control which, in turn, benefited the undergraduate students. It provided a professional
development model that was cost-effective while at the same time enhanced the quality of the environment within the department.

Why Did These Interactions and Reactions Take Place?

Theoretically, peer collaboration provides a support base that helps to establish effective linkages and in turn creates successful partnerships in which everyone benefits. According to Kanter (1989), these partnerships have the following characteristics:

1. The relationship is considered important to all participants.
2. There is an agreement for a long-term investment.
3. The organizations are integrated for the management of contact and communication.
4. Each is informed about the plans and directions of the other.
5. The partnership is institutionalized, bolstered by a framework of supporting mechanisms, from legal requirements to social ties.

The partnership examined in this study was a synergistic effort between the IAPMs and IEPMs to achieve some benefit from the PCM program that could not have been achieved otherwise. It was, in effect, a regeneration for the participants. Although all participants marched to the same music (PCM process), each person did play a different instrument (skill), and the benefit was the beautiful symphony that was created individually and as a group.

Conclusion

PCM has been approached as a model for professional development. This process does not allow the individual to become "fossilized" in teaching. The model does teach that growth will only emerge when the individual in
isolation and the surrounding environment interact together. In order to benefit from the experience of the PCM process, the participants must be allowed to modify their environment so that it assimilates to their structure, and modify themselves in order to assimilate themselves into their environment.

To further illustrate the modification on one's environment, the reader is encouraged to read *Zapp: The Human Lightening of Empowerment* by Byham and Cox (1989). This book focuses on human behavior in organizations and was used by IAPMs as part of their professional development during the PCM project. Although Byham and Cox's (1989) application relates to business and industry, the suggestion that the light comes from all the people is applicable to the development of learning communities such as the PCM project. *Zapp* speaks to the value of human resources and the commitment that each person has to the other. The maintenance of self-esteem, listening, responding with empathy, providing assistance, sharing responsibility without abandoning responsibility, and constant performance feedback provided insight into the total quality management of the PCM process. Although *Zapp* was not intended to represent the Peer Collaborative Mentoring concept, it did provide an accurate description and metaphor for the type of process used in this study.

In the end, the process of professional development helped the participants develop a strong sense of collegiality. It provided an atmosphere where participants were cultivated, rather than sequestered, resulting in an improved quality of professional life for the IAPMs and IEPMs.

In today's intercultural classrooms, adjustments need to be made to accommodate heterogeneous populations. The cause of the language problem may be "the college classroom culture, the norms for behavior and
the values by which students are judged are largely extensions of mainstream Anglo culture" (Condon, 1986, p.11). Characteristics of the American university classroom that were never considered to be a problem in the past have now become issues that must be resolved on a daily basis. This study supported the assertion of vom Saal (1984) who stressed that non-verbal communication, pacing, ethnocentrism, syntax, methods of delivering information, and xenophobia are just some of the issues that impact the quality of communication between undergraduate students and their IGTAs.
CHAPTER V

Summary, Conclusions and Implications

This chapter is designed to present a: (1) summary of the study, (2) conclusions on: socialization and peer collaborative mentoring, language and xenophobia, and culture; (3) recommendations; (4) implications for further research; and (5) chapter summary.

Summary of the Study

This study has focused on the implementation of peer collaborative mentoring (PCM) and the professional development of international graduate teaching assistants at an American university. The participants in this study included five Chinese graduate teaching assistants (Intercultural Peer Mentors or IEPMS) from the Department of Chemistry, three American peer mentors (Intracultural Peer Mentors or IAPMs) from the College of Education, and 130 undergraduate students enrolled in an introductory chemistry course.

The PCM process was designed to assist IEPMs and IAPMs in developing cultural sensitivity, effective teaching techniques, cross-cultural communication skills, and language skills in order to enhance professional development and the quality of life in the classroom. Reciprocity, parity, mutuality and cultural sensitivity were the key ingredients in the PCM process. These ingredients provided the basis for a nurturing and caring professional relationship between and among mentors.
Using this frame of reference, the following research questions were prepared to become the focal point for the study:

(1) What interactions occurred during the implementation of the Peer Collaborative Mentoring process?
(2) Why did these interactions take place?

Conclusions

Socialization and the Peer Collaborative Mentoring Process

One might expect that organizations dedicated to developing a quality educational environment would be structured in such a way that teachers could learn from one another. Yet most IEPMs report a sense of great isolation as teaching assistants. This is a glaring anomaly.

The PCM process was an attempt to overcome this anomaly. As a socialization process, PCM provided an opportunity for two cultures to come together and act on behalf of one another so that each group would grow professionally. PCM was seen as a developmental relationship that encouraged the participants to share new ideas, discuss problems, brain storm, and work in concert with one another without fear of retribution or isolation. As with most developmental relationships, the participants went though stages or phases. Each phase was characterized by observed changes in the nature of the interactions among mentors. Working together in the PCM process validated each individual's contribution to the mentoring group, and enhanced their ability to work in a collaborative environment. The IEPMs and IAPMs were committed to the principle of excellence in teaching and to the quality of students and faculty life. It was by definition, the "good teaching" that Daloz (1988) spoke of.
For good teaching rests neither in accumulating a shelfful of knowledge nor in developing a repertoire of skills. In the end, good teaching lies in a willingness to attend and care for what happens in our students, ourselves, and the space between us. (p. 244)

The socialization process was also a form of issue identification, cultural mediation, and crisis management. The duration and intensity of the problems faced by the IEPMs were seen by this investigator to be a function of several variables. Throughout the study it was important for the IAPMs and IEPMs to identify issues (i.e., gender, language, pedagogy, culture) confronting IAPMs, and monitor their effects so that problems could be isolated and specific intervention techniques could be employed to minimize or manage them. The method that was most often employed in identifying specific problems was the use of questioning techniques which were considered a litmus test for specific problems. The following questions represent a sampling of those that were considered by both IAPMs and IEPMs in order to isolate problems for possible intervention and support:

1. Is there a good chance that this problem, if left unattended, will escalate?
2. Might this problem foster unwanted attention?
3. Is it likely that this problem might interfere with the classroom environment?
4. Could the problem give the IEPMs a negative image or cause students to lose confidence in the IEPMs credibility?
5. What is the bottom line? What will be the overall effect of resolving this problem in the short-term and the long-term.
This approach was very successful in clarifying and managing most of the issues confronting IEPMs and IAPMs. It provided an environment in which everyone had ownership of potential problems and had a stake in resolving them. All of the participants felt that they were stewards (caretakers) of the PCM process and effective teaching practices. IEPMs and IAPMs were collectively accountable for what went on in the classroom; that is, they worked actively to create, maintain and improve the quality of the learning environment. They viewed the process as an opportunity to become even more responsible for their actions. Monitoring their own professional needs and the health of the classroom was seen as a vital and essential component of effective instruction (pedagogy, language, cross-cultural communication). As stewards, they made every effort to practice activities which enhanced their effectiveness in the classroom.

The willingness of the IEPMs and IAPMs to support one another was the basis for an "esprit de corps" which seemed to reverberate throughout the course of the project. This empowered the participants and provided the opportunity to engage in those activities necessary to improve the quality of life in the profession and the classroom. This empowerment, from a theoretical perspective, which can be described through General Systems Theory provides insight into peer collaborative mentoring as a socialization model. "The focus of this theory looks at relationships and the invisible threads of influence within which any action inevitably occurs. . . . Systems theory thus allows us to see not only how individuals behave but how individuals and environments interact" (Daloz, 1986, p. 187). This theory drives home the point that there is always a somewhat ragged fit between ourselves and others because of environmental factors. "We are all bound to live in somewhat different worlds" (Daloz, pp. 187-189). This is most
apparent when our environment changes, as with the IEPMs, that is, when they moved to another country and changed educational systems. When people change professions, or go through some form of metamorphosis, a ragged fit is created as they move through the transitions. This ragged fit may result in dissonance (i.e., cultural shock, information overload, cultural insensitivity). This dissonance can be minimized or overcome when there is an atmosphere of support and caring, as was the situation in this study. In the case of the IEPMs and IAPMs, the commitment to cultural pluralism, cultural sensitivity and a genuine desire to make life "a little less complicated" helped to establish a connection between cultures.

Just knowing there is a connection between worlds, that there will be someone ahead when we arrive yet still there should we turn back, can be the extra encouragement we need to swing out over the brim (Daloz, 1986, p. 193).

Language and Xenophobia

During the course of the study, language was the problem most often identified by students and IEPMs as having the most ragged fit between IEPMs' ability and students' expectations. Historically, IEPMs have been assumed to be responsible for any communication problems that might occur in the classroom. This assumption is often supported by perceptions of administrators, students and their parents. However, research indicates that in most cases the responsibility should be shared by students and their IGTAs. Therefore, it seemed most appropriate to ask the question: who contributed to the language problem which emerged in this study: the IEPMs, the students, or both?

It became evident four weeks into the study that both groups contributed to the language problem. The IEPMs were responsible for
effectively communicating the knowledge and skills needed to assist students in learning about chemistry. Unfortunately, the IEPMs' accents, incomplete command of the American syntax, limited vocabulary, and "foreigness" complicated student perceptions of the IEPMs' effectiveness as teachers. On the other hand, the students were responsible for maintaining effective communication with their IEPMs. Attitudes about what effective communication sounds like in the classroom was influenced by their values and beliefs, some of which paralyzed a number of students. This paralysis took the form of cultural barriers which inhibited the students' ability to listen to their IEPMs. This paralysis occurred for a number of reasons: xenophobia triggered by the IEPMs' accent and a foreign status; students' difficulty with the language of chemistry; students anxiety about the Department of Chemistry's expectations; pre-existing stereotypical perceptions of the IEPMs; and, ethnocentric biases reinforced by students having little or no experience with IEPMs as teaching assistants.

Because there appeared to be a mismatch and ragged fit in communications between IGTAs and students, a breakdown occurred in the learning environment. The underlying feature of this ragged fit was mainly due to the expectations that students had of their IEPMs. Students' expectations of what happens in a university classroom and their view of cultural differences helped to produce a ragged fit between the two cultures. The IAPMs concluded that mismatch neither contributed to the quality of life in the classroom nor to the support of the IEPMs professional development. Even though the IEPMs did have an accent, they made every effort to speak slowly and use the proper syntax and the appropriate vocabulary to clearly communicate with their students. Although the students knew that the IEPMs had taken these measures to correct any communication deficiencies,
some students were not satisfied. For these students, no amount of additional training for IEPMs in pedagogy, language and cross-cultural communication would make a difference. Their perception of their IGTAs was dependent upon other issues. To further illustrate this last point, the following metaphor will be used. In looking at some of the students perceptions of their IEPMs, it appeared that their focus was on a small cluster of grapes, rather than the vineyard. Their perceptions seemed to be motivated by what they could not learn, rather than what they could learn from a visiting scholar from the international community.

In a similar study of undergraduates' perceptions of nonnative English-speaking teaching assistants (NNSTAs), Rubin and Smith (1990) found that students judged their NNSTAs to be poor teachers if they had a high level of "accentedness." They noted that:

[No] amount of NNSTA [IEPM] pronunciation drill would ever eliminate that level of accentedness which marks an instructor as ethnic and which triggers expectations of poor teaching ability. On the basis of these results, at any rate, feasible pronunciation training will not result in improved student comprehension. (p. 350)

The IEPMs in this study also suffered from these kinds of negative expectations. Furthermore, perceived effectiveness of IEPMs appeared to be impacted by issues of xenophobia. Xenophobia refers to a fear or dislike of foreigners. A small number of students admitted that they did not want to be taught by someone from a foreign country. They felt that having an American TA would better serve the student population. When questioned about why they felt that way, responses included, "I don't like having people from another country trying to teach me"; "I'm paying good money to get a
good education and this is what I get"; "As soon as I heard that we had a foreign TA I tried to drop the course, unfortunately I was not successful."

These responses were fairly typical and suggested that the solution might not lie with improving the IEPMs' ability to communicate effectively. There was a very strong indication that a number of the students were racially biased, and no amount of improvement on the IEPMs' part would have altered their perceptions. Although this conclusion was more the exception than the rule, it nevertheless reflects a cultural insensitivity that can stifle the learning environment and cripple the potential professional relationship between student and IEPM.

Culture

Bringing the mentor participants (IAPMs and IEPMs) together provided a cultural forum for cross-cultural socialization. This type of socialization was based upon finding a common basis of values and beliefs for promoting cultural pluralism within this culturally diverse society. It was important for the IAPMs to encourage the IEPMs to maintain a strong connection with their cultural heritage so that the students might benefit from their experiences. It was also essential to provide the IEPMs with the skills needed to become effective teachers in the American university system, without asking them to be completely assimilated into the American culture. The IAPMs' objective was to show them the respect that they deserved as scholars of the international community and to honor their country's traditions in an environment new to the IEPMs. In retrospect, the IAPMs and IEPMs viewed this form of cross-cultural socialization as an opportunity to address ethnic literacy and an appreciation to address ethnic literacy and cultural diversity. It was an opportunity to make use of traditions from two
cultures dedicated to providing quality education. This cultural forum moved beyond the rhetoric in education that predicts problems and speaks of human potential and the need for equality of opportunity. PCM allowed the IAPMs and IEPMs a chance to practice actions based on the Noah Principle (Holmes Group, 1990), which subscribes to the belief that "there are no more prizes for predicting rain, prizes are only given building arks." This forum was also an opportunity for the IEPMs and the IAPMs to practice cultural pluralism (i.e., a belief in the value of all cultures) at its best and to learn from one another. In these endeavors, the IAPMs and IEPMs were very successful. Many of the students seemed to see the value in this process as it was demonstrated in the laboratory and recitation sections by their IEPMs. They felt this process indicated that their IEPMs were willing to make the effort needed to resolve issues that had been impeding their success. Students also felt that they would be more understanding and culturally sensitive of those international graduate teaching assistants who were willing to improve their communication skills, teaching techniques and strategies for the benefit of their students. Several students had made the comment that they appreciated the fact that the IEPMs and the IAPMs were working with one another to improve the teaching effectiveness of the IEPMs. A typical comment noted that, "Quite a few of us have seen a difference in our TAs. I guess it's nice to see that there are some responsible people that care enough to make a difference in our education." A small number of students also commented on the rigor of the Chinese educational system and how strong the Chinese TAs' commitment is toward a quality education. The students wished they could have had, particularly in their high schools, the kind of education that demanded a little more of them.
Unfortunately, there were a small group of students who defined their cultural boundaries through the color of skin and accent. Their prejudices were a form of "cultural remote control" which manipulated their perceptions and did not allow them to reap the benefits of a cross-cultural education. These students did not seem to interact with the level of cultural sensitivity that their IEPMs had shown them. The students took little or no responsibility for the quality of educational environment that existed for them. Their failure to transform their attitudes was a hallmark for these students and a way of life in the classroom. To this investigator, these students were paralyzed and were captives in their own cultural "gridlock."

During the PCM process, cultural growth became a mutual recognition of one another's distinctiveness and a mutual effort to create a context within which these two distinct cultures could work together. Dilemmas and boundaries gave way to opportunities for learning, as mentors and students moved through each phase of the process.

**Recommendations**

The results of this study lead to several recommendations that are essential for quality assurance in the PCM process.

1. **Clarify Collaborative Scheduling and Commitment of Time to PCM.**

   When making the decision to participate in a PCM project, a commitment should be required to provide sufficient quality time to accomplish those tasks that are germane to the goals of the project. For example, IAPMs will need to schedule for classroom/lab observations, feedback sessions, and weekly meetings with others, including students and IAPMs. It is critical that IAPMs schedule their time collaboratively, because if a mentor does not have
enough time to carry out responsibilities, then the commitment falls to another member of the team. This can increase the level of anxiety which may reduce the effectiveness and the quality of the collaborative effort.

(2) **Consider Mentor Pairing Matched to the Participants' Needs.** Cultural beliefs and attitudes about race-pairing and gender-pairing must be considered when implementing the PCM process. There is a great deal of value in dialoguing and researching this potential issue with all of the participants prior to and during the implementation of the PCM process.

(3) **Collect Pre-and Post-Evaluation Data.** Pre-and post-measures is beneficial for all of the participants (IEPMs, IAPMs and students). This provides a much stronger measure of the PCM process and provides feedback for the IEPMs on the quality of interactions, ability to communicate effectively, and the quality of the learning environment. It is also recommended that students be given the opportunity to evaluate their IEPMs on a bi-weekly basis. This would provide essential data on perceptions and quality of the learning environment.

(4) **Obtain Administrative Consent and Permission.** As with any education project, permission must be obtained from the appropriate administrative officials. It is important for the administrators to understand the potential value of the PCM process and what it can bring to the classroom, department, college and university. It must be emphasized that this process should not be used as an evaluative tool by the administration to assess performance of the IEPM. The administrator's critical role in the PCM process should be to provide support and encouragement to all of the participants. Providing this type of coaching assistance is an aspect of total quality management (TQM). The TQM principles (Deming, 1991) can be applied to the PCM process and establish an environment in which participants may collaborate without fear
of retribution, thus enhancing the educational process and professional
development of mentors.

(5) Obtain Administrative Support for a Culturally Sensitive Environment. A culturally sensitive environment needs to be supported by the administration throughout the life of the project. Establishing this type of environment from the beginning of the PCM process is important if a strong collegial relationship is to be built. This basis for a learning community is established through frequent meetings, classroom observations, feedback sessions and maintaining an interest in the cultural heritage of the various participants. Modeling trust and empathetic behavior helps to reduce the anxiety that usually takes place in a developmental relationship. This modeling can be provided by faculty and administrators who support the project.

(6) Maintain an Equal Shareholder Relationship. The expectations of each participant (IEPM and IAPM) to become an equal shareholder in the PCM process, rather than a member of a hierarchical relationship, is a way of validating the quality of the relationship as well as the importance of incorporating each individual’s contribution. This method of empowerment is related to TQM principles. Mentors may need to be oriented by faculty and administrators so that they are aware of the variety of skills and knowledge they bring to the partnership. They also need to be aware of the power of their combined efforts in resolving issues that confront the individual and/or group.

(7) Obtain Informed Consent of PCM Student Participants. Practical and ethical considerations highlight the importance of understanding why the observations are taking place and appraising the students of the purpose of the evaluations and potential benefits. This provides the students with a
perspective of the IEPMs' professional development which they might not have had. This is also an opportunity for the IEPMs to act as advocates on behalf of their students.

(8) Meet Frequently and Regularly. A minimum of one weekly meeting of at least 50 minutes between IAPMs and IEPMs is essential. The meetings should be conducted in an atmosphere where feelings can be vented, problems can be assessed, brainstorming can occur, and solutions posed and planned.

(9) Provide Continuous Student Feedback to IAPMs. It is important for IAPMs to experience feedback from students, including those who do not appreciate having an IEPM as a teacher. These students appear to place little value on cultural sensitivity as an effective contributor to learning. Even when the IEPM is considered to be an effective teacher by an IAPM or administrator, these students will still evaluate the IEPMs as a poor teacher. This limitation is an important consideration in the IAPM's appreciation of the students' role in contributing to the success of the learning environment. In this particular situation, I am reminded of a quote by Jean Houston (1981): "We are given as our birthright a Stradivarius, and we come to play it like a plastic fiddle." In this particular quote, the IEPMs may be seen by some students as a "Stradivarius," an instrument which can provide beautiful music or support a quality learning environment. The "plastic fiddle" represents an alternative student perception of the IEPM as a poor teacher because of the cultural differences.

(10) Conduct IEPM Orientation. At the beginning stages of their teaching assistantships, IEPMs should receive an orientation to prepare them for teaching in the U. S. classroom. Suggestions for orientation strategies and techniques are found in Appendix F.
(11) **Conduct Student Orientation.** It is also important to provide the undergraduate students with strategies and techniques to improve their cross-cultural communication skills and to facilitate their working with IGTAs. This could be done in several ways: departmental orientation programs for new students which include working with IGTAs in a cross-cultural classroom; inclusions in general orientation programs provided by the university for new students; and a variety of academic experiences, projects and social interactions sponsored by the university in which students and IGTAs exchange perspectives and develop working relationships.

(12) **Conduct Class Orientations.** During the first day of class, IEPMs can provide their students with a list of suggestions to increase their cross-cultural communication skills and increase the effectiveness of the learning environment. Suggestions for these techniques and strategies are found in Appendix G.

(13) **Conduct a Needs Analysis with IEPMs and IAPMs.** At the beginning of the PCM process, it is important to conduct a needs analysis to determine the needs of the individual and the group. This is done in an atmosphere of support and collaboration and to help the individual and group seek their professional potential.

(14) **Cultural Background Research.** The value of this research, prior to the implementation of the PCM process, is to provide the IAPMs with a background on the cultural beliefs and values, the cultural heritage and the educational environment from which the IEPMs are coming. In essence, this provides the cultural groundwork for establishing a relationship based, in part, on cultural sensitivity.

The goal of these recommendations is to support the continued effectiveness of the PCM process.
Implications for Further Research

The following comments and questions are generated as a result of this study and provide the impetus for further research.

Ethnic literacy and cultural sensitivity are important ingredients in the cultural socialization of undergraduate students and their IGTAs. Most of the students in this study valued the socialization process and saw it as an important part of their education. However, there were those students who did not subscribe to this form of sensitivity and literacy in the classroom. Their prejudice did not allow them to expand their cultural horizons. As an outgrowth of this problem, the researcher believes that additional research needs to be conducted. This research should focus on two elements: (1) whether cultural sensitivity can be taught to students who are not culturally sensitive to the values, customs, and beliefs of another culture, and (2) how can undergraduate students be encouraged to become more tolerant of other cultures and viewpoints?

The ragged fit or mismatch in language that occurred between the IGTAs and their undergraduate students in this study has been a national issue for the past forty years. Although the IAPMs and IEPMs attempted to resolve some of the language problems that hindered communication in the classroom, accent was still a problem for a few students. With this issue in mind, research needs to be carried out which examines the effects that accent has upon the students' perceptions of the teaching effectiveness of international graduate teaching assistants.

In spite of the positive nature of the PCM relationship and the fact that the IAPMs and the IEPMs were very supportive of one another, the
relationship was not without its problems. Because pairings became a subtle issue for the IEPMs, although they (IEPMs) had originally said this would not be an issue. This researcher believes that it would be of value to examine specific cultural perceptions on gender and race pairings as it relates to Peer Collaborative Mentoring, especially, since there is little research that has been conducted on cultural pairings as it relates to mentoring.

Finally, Peer Collaborative Mentoring is viewed as an interactive and synergistic relationship which provides the participants with a variety of support services. Unfortunately, these services do not always provide the appropriate response to the problem. This researcher believes that it would be in the best interests of those who choose to participate in this program to determine the barriers that could prevent collaboration from occurring between IAPMs and IEPMs, and to examine what successful peer collaborative mentors do.

Summary

At the present time, there is a general absence of mentoring programs in U. S. higher education for the professional development of international teaching assistants. Traditional norms which reinforce individual accomplishment, competition and scholarly isolation limit the likelihood that such collaborative programs will emerge. Thus academic organizations fall short of their potential to provide this kind of professional development for their faculty. Colleges and universities need to act in ways consistent with the assumption that instructional goals will be more effectively achieved if they assume responsibility and provide a supportive context for facilitating the professional development of all faculty. Clearly, colleges and universities
need to respond to the question posed by President Byrne of Oregon State University (1992) during a Martin Luther King Day address, when he suggested that "we all need to consider that life's most persistent question is, what are we doing for others?"

The PCM process is based on the principles of developing synergistic relationships. It is an action-oriented process in which all mentors and students benefit from one other. For example, the IAPMs act as cultural mediators between the IEPMs and students. The objective of this form of mediation is to function as translators and synthesizers between "distinct cultural platforms" (Snow, 1991, p. 5). The "Mediator-as-translator" function aims to accurately represent one culture to another, whereas the "mediator-as-synthesizer" function is more proactive and attempts to resolve cultural conflicts so that there is mutual growth for all participants.

In the PCM process, participants acted as synthesizers and translators in an atmosphere that respected cultural sensitivity, parity, mutuality and reciprocity. PCM encouraged the belief that each participant was a steward of the PCM process and had a direct impact on enhancing classroom learning. This PCM form of collaborative mentoring does not just teach a discipline or a body of knowledge, it provides a process for working with the whole person regardless of his/her cultural background. Participants were urged to examine their teaching and learning styles and invoke principles of reflection in action to enhance their quality of teaching. Reflection in action is a form of conscious awareness that is designed to mirror information back to IEPMs and IAPMs. This mirroring is critical to professional development.

Reflection in action also helps an educator to focus on the goals and mission of effective teaching so that the art and craft of teaching is grounded in a theoretical framework. PCM encourages action from the perspective of
informed practice which focuses on goals and desired learning outcomes. This perspective is illustrated in the following story:

Two stone cutters . . . . were engaged in similar activity. Asked what they were doing, one answered, "I'm squaring up this block of stone." The other replied, "I'm building a cathedral." The first may have been underemployed; the second was not. Clearly what counts is not so much what work the person does, but what he is doing it for.


The PCM model honors the craft of teaching. It does not imprison its human resources by keeping them in isolated, discreet departments where squaring blocks of stone take place. PCM develops the human spirit so that everyone who touches it might view their professional potential as one of building cathedrals. This is the critical difference between maintaining mediocrity and striving for excellence. In the final analysis, PCM is an important crucible or vessel for those who are stewards of the craft and who are responsible for the correct use of the art.
BIBLIOGRAPHY


Wilson, Colleen and Fung, Sheowa. (Jan 1991). Interview on Chinese graduate students at American universities.


Appendices
OBSERVATION PROTOCOL

The IAPMs will be responsible for observing the IEPMs at least once a week during the implementation phase of the project. Each observation will last the class period and will involve observations of the interactions between the IEPMs and their students.

At the conclusion of the observation period, the IAPM and the IEPM will determine a time that is convenient for the debriefing. During the debriefing the IAPM will provide an assessment of the lesson and intervention strategies for the IEPM.
# OBSERVATION PROTOCOL SCHEDULE

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Appendix B
INTERVIEW PROTOCOL

The primary source of information for this study will come from interview data that will be collected from December 7, 1990 to March 31, 1991. The principle actors that will be participating in the interview process will be five Chinese Graduate Teaching Assistants and three facilitators who are participating in the pilot Mentoring Research Program at Oregon State University.

The interview protocol will be divided into three parts. The first part includes an initial set of questions that the Chinese Graduate Teaching Assistants and the facilitators will be asked, each separate from the other. The second part involves a series of weekly interviews concerning the weekly activities and the observations that were made by the facilitators of the Chinese Graduate Teaching Assistants in their laboratory setting. The weekly interview also includes interviews with the Chinese Graduate Teaching Assistants. The final part of the interview protocol will involving an exit interview of all participants individually and as a group.
INTERVIEW FORMAT AND QUESTIONS

Interview Format

[The Interview format will be read to the interviewee at the beginning of the initial interview.]

I would like to take this opportunity to thank you for agreeing to participate in our interview as part of a doctoral study on mentoring international teaching assistants. This interview will take approximately 45 to 60 minutes, depending upon your responses and any discussion that may follow. Some of the questions may be similar in nature for the purpose of clarification.

For documentary purposes, I would like to tape record our interviews sessions for the next 16 weeks. Please be assured that your name will not be used in any way and comments you make will not be traceable to you. I will also be taking notes during the interview so that I might make notations of important comments that you make. If you have any objections to recording this session or any of the other sessions that you will be participating in, or wish to make a comment with the recorder turned off, please tell me.

Oregon State University requires that I provide and explain the consent form prior to beginning the interview session. Although you have already given verbal consent to participate in this study, do you have any questions about the intent of the interview sessions or comments concerning the study?

Thank you for your participation in this pilot program and your commitment to providing a quality education for the undergraduate population.
INITIAL INTERVIEW WITH THE IAPMS

1. Have you ever mentored a non-native and/or a native speaking person before? Please explain your answer.

2. Did you find one more difficult to mentor than the other? Please explain your answer.

3. What impact has the MRP class had upon your ability to mentor?

4. Do you think that mentoring cross-culturally will be any different than mentoring someone from your own country?

5. Are there special circumstances that you feel you must prepare yourself for in order to mentor the Chinese Graduate Teaching Assistants? Please explain your answer.

6. What type of training have you received to become a mentor?

7. Why do you think you were asked to become a mentor for the MRP?

8. What strengths do you bring to this mentoring relationship?

9. What weaknesses do you bring to the mentoring relationship?

10. What have been some of the organizational barriers that the MRP class did not foresee, in preparing you to mentor the Chinese Graduate Teaching Assistants?

11. Do you think that it is desirable to have a formalized mentoring program for the Chinese Graduate Teaching Assistants? Please explain your answer.

12. Do you believe that collaborative mentoring will be an effective tool for mentoring new Chinese Graduate Teaching Assistants? Please explain your answer.
INITIAL INTERVIEW WITH IEPMS

The following questions are part of the initial interview with the Chinese Graduate Teaching Assistants at Oregon State University.

1. Do you spend time interacting with other new teaching assistants? Please explain.

2. Do you spend time interacting with experienced TA's? Please explain.

3. Do you spend time interacting with other international graduate teaching assistants? Please explain.

4. Do other experienced TA's seek you out to help or assist you or do you go to them and ask them for assistance? Please explain.

5. Do you seek advice from your immediate faculty supervisor or members of the faculty? Please explain.

6. What type of training were you given to prepare you for the instruction of undergraduate students in a laboratory setting?

7. What type of training did you receive from your department to prepare you to teach the undergraduate student?

8. When you meet with other TA's, what kinds of things do you talk about?

9. How do you generate new ideas for teaching the undergraduate student in a laboratory setting?

10. What types of concerns did you have when you first began teaching?

11. What type of teacher training have you received in China?

12. Do you believe that you had a good idea of how to teach in an American university? Please explain.

13. How did you feel about working with the facilitators (Ellen, Michael and Gary)? In what ways do you think they might be able to help you? In what ways do you think that you might be able to help them?
INTERVIEW QUESTIONS FOR IAPMS WEEKLY DEBRIEFING

The following questions will be part of a weekly debriefing of the facilitators participating in the Mentoring Research Project. The questions are "open-ended," which means that there are no preset responses. Merely respond to the question in your own way; there are no right or wrong answers. Take as much time as you want. Make your answers as detailed as you feel is necessary.

1. Please explain the activities that you participated in this week with the CGTA's?

2. What problems did you encounter this week in the mentoring relationship?

3. What positive events did you encounter this week in the mentoring relationship?

4. Were there any major obstacles that you encountered this week? Explain

5. What did you do for the CGTA this week that you did not do the previous week?

6. Overall, how did you think the week went for you?

7. If you could change anything that you did this week in working with the facilitators and/or the CGTA's, what would that be?

8. Do you find it easy or difficult to work with the CGTA's?

9. What benefits do you believe you have received this week from the mentoring relationship?
INTERVIEW QUESTIONS FOR IEPMs WEEKLY DEBRIEFING

The following questions will be part of a weekly debriefing of the IEPMs that are participating in the Mentoring Research Project. The questions that you will be answering are "open-ended," which means that there are no set answers to the questions. You merely respond to the questions in your own way: there are no right or wrong answers. Take as much time as you want. Make your answers as detailed as you feel necessary.

1. Is it becoming easier for you to work with the undergraduates in a laboratory setting? Explain your answer.

2. Did you encounter any problems in the laboratory and/or in your presentation to the undergraduates this week? Please explain.

3. Have you been assisted by the IAPMs this week? Explain.

4. Do you feel it is easy to work with the IAPMs? Explain.

5. If you could start the week over again in your laboratory, would you do anything different? Explain.

6. What do you think that the undergraduate students could do to improve their skill level in the Chemistry 105?

7. In what way or ways have you helped the IAPMs?

8. Do you have any comments that you would like to make about the IAPMs and/or the PCM process?
CLOSING INTERVIEW FOR THE IAPMS

1. In retrospect, what conditions do you think are necessary for the facilitators and new Chinese Graduate Teaching Assistants to work together harmoniously and productively in an American university?

2. If you had the choice, would you participate as a facilitator again in this same program? Please explain your answer.

3. What do you value most about your relationship with the Chinese Graduate Teaching Assistant?

4. What do you value most about your relationship with the other facilitators?

5. How did you contribute to the collaborative mentoring process, in working with the Chinese Graduate Teaching Assistants and the other facilitators? Be as detailed as possible.

6. What did you learn from the other facilitators?

7. What types of reciprocity occurred between you and the Chinese Graduate Teaching Assistants?

8. How did mentoring Chinese Graduate Teaching Assistants differ from mentoring native speaking teaching assistants?

9. Do you feel that you could have prepared yourself for mentoring the Chinese Graduate Teaching Assistants any differently? Please explain your answer.

10. What could the MRP class have done to better prepare me to mentor the Chinese Graduate Teaching Assistants? Please explain your answer?

11. What are the strengths of the MRP class in relationship to the facilitators?

12. What are the weaknesses of the MRP class in relationship to the facilitators?

13. Would you recommend any changes in the MRP class that would better prepare the facilitators for the mentoring experience with international teaching assistants? Please explain your answer.

14. Do you feel that the peer collaborative mentoring process is an effective process to use with new international graduate teaching assistants? Please explain your answer.
15. In your opinion, how effective was the peer collaborative mentoring program you participated in? Please explain your answer.

16. Do you feel that the Chinese Graduate Teaching Assistants prefer models who are similar to themselves or who are perceived as more powerful? Please explain your answer.

17. Are there any closing comments that you would like to make before you conclude this interview? Please feel free to address any issue or concern.
CLOSING INTERVIEW FOR IEPMS

1. What has been the most difficult thing for you in teaching at an American university?

2. What has been the most difficult part of teaching the undergraduate students at an American university?

3. What is it like to teach undergraduate students at an American university?

4. What were some of the weaknesses you knew you had when you first began working as a teaching assistant at Oregon State University?

5. Do you feel that you were able to improve on your weaknesses and become a more effective teacher? Please explain your answer.

6. Did working with the facilitators (Ellen, Michael and Gary), increase your effectiveness as a laboratory instructor? Please explain your answer.

7. Were the facilitators easy to work with? Please explain your answer.

8. Did the student evaluations help you in determining your strengths and weaknesses?

9. What did your student evaluations tell you?

10. Do you feel it is important to have experienced graduate teaching assistants help new graduate teaching assistants become adjusted to their teaching assignments? Please explain your answer.

11. Would you be willing to help new international teaching assistants in your department adjust to their teaching assignment? Please explain your answer.

12. Have you ever had someone like the facilitators (Ellen, Michael and Gary), help you prepare for your profession in the past?

13. In what ways do you feel that you have helped the facilitators?

14. Please select the words that you think characterize the relationship that your facilitator had with you.

   ___ a. Helper
   ___ b. Friend
   ___ c. Teacher
   ___ d. Role Model
   ___ e. Supporter
   ___ f. Counselor
   ___ g. Protector
   ___ h. Advisor
   ___ i. Sincere
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Appendix C
# Teaching Assistant Laboratory Evaluation

**TA's Name ____________________________  Todays Date ____________**  
**Lab Day ________________  Lab Time ______________**

The purpose of this questionnaire is to help TAs to improve their teaching in the Chemistry laboratory. Please rate each of the items below.

N/A=Not Available, P=Poor, F=Frequently, VF=Very Frequently, H=High

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<td>1. Helps students to understand the basic facts and terminology.</td>
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<td>2. Gives directions clearly.</td>
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<td>3. Encourages students to ask for help in understanding procedures.</td>
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<td>4. Shows a genuine interest in students.</td>
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<td>5. Encourages students to help each other in the lab.</td>
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<td>6. Helps students learn to evaluate data on their own.</td>
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<td>7. Passes on time-saving tips to students.</td>
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<td>8. Praises and rewards good techniques, observations, and results.</td>
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<td>9. Shows students how to setup equipment.</td>
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<td>10. Expects students to understand the reasons for the procedures which are used.</td>
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<td>11. Listens attentively to requests for help.</td>
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<td>12. Talks about key procedures and likely difficulties before the lab experiment.</td>
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<td>13. Helps students understand sources and analyze errors.</td>
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<td>14. Indicates important points to remember.</td>
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<td>15. Comes well prepare.</td>
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<td>16. Stimulates students' intell curiosity.</td>
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<td>17. Grades fairly and consistently.</td>
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<td>18. Available outside of lab time.</td>
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<td>19. Responds to questions.</td>
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<td>20. Has good board skills (writing).</td>
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<td>21. Communicates well with students (able to understand what is said).</td>
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22. What are the strengths of the TA?

23. What are the weaknesses of the TA?
MENTOR SURVEY

I. General Data

A. Mentor's Age ___ Mentor's Gender ___ Mentor's Highest Degree ___

B. Have you had prior teaching experience? If yes, please explain.

C. Were you ever a mentor for an induction program before?
   Yes ___ No___
   1. If yes, how many times before were you a mentor? ___

D. During Winter Term, approximately how much time did you spend with your CGTA?
   1. Laboratory time ___ minutes per week.
   2. Conferencing with peer mentor ___ minutes per week.
   3. Include miscellaneous times and estimate total hours you spent with Chinese teaching assistants: ___
   4. How many observations did you make during Winter Term?

E. On a scale of 1 to 5, how would you rate the peer mentoring relationship for the term?

Scale: Very Low 1 2 3 4 5 Very High

II. Dimensions of Mentoring

Below are a list of mentor benefits frequently cited in the literature. Please indicate to what extent they represent your feelings about the benefit you have received this year as a mentor. Please use the scale below to indicate your choices on each dimension.

Scale: Very Much 5 Quite a Bit 4 Somewhat 3 A little 2 Not at All 1 Not Applicable N/A

A. Professional Dimension

   Became more aware of the importance of communicating in a professional manner ___
   Rejuvenated me professionally ___
   Helped reinforce my own professional identity ___
   Gave me an opportunity to show my own talents ___
   Challenged me professionally ___
   Became more aware of my own deficiencies ___
Provided a valuable link to university personnel ___
Comments:                            Other:

B. Personal Esteem Dimension
Gained recognition and status from others for effective mentoring ___
Reaffirmed my perception that I could work with other people ___
Felt honored to be selected as a mentor ___
Met my need to be needed ___
Built my own self-confidence ___
Was an "ego booster" ___
Felt important when my protege asked for advice ___
Satisfied my need for authority "taking charge" ___
Comments:                            Other:

C. Skill Dimension
Prompted me to experiment with new ideas/techniques in my own classroom ___
Caused me to analyze my own teaching more ___
Kept me on the cutting edge of my own field ___
Sharpened my ability on how to effectively help another ___
Sharpened my listening skills ___
Stimulated ideas for me to use in my classroom ___
Improved my own skills ___
Caused me to choose my words more carefully ___
Helped develop my leadership skills ___
Comments:                            Other:

D. Relationship Dimension
Fostered a sense of pride in helping another get started in the profession ___
Provided a sense of accomplishment in seeing professional growth in the international teaching assistant ___
Pleased me when I saw my CGTA mirror some of my techniques ___
Pleased me to know that my CGTA found my past experiences useful ___
Felt good to see my CGTA avail himself of new opportunities in the Chemistry Department ___
Gave me a sense of pride in passing the skills of the profession to a new teaching assistant ___
Established trusted friendship ___

Happy to see my CGTA become more independent ___
Received affirmation and support from my CGTA ____
Comments: Other:

If you could construct a list of the negative aspect of being mentor, what three (3) items would be most important to you?

III. Role-Functions

Mentors play a variety of roles. Please read each definition of the following specific roles and indicate the extent to which you may have played that role. (The roles are not mutually exclusive. Rather, they represent a major focus of mentoring activity.) Think about the manner in which you mentored, then ask yourself, "How representative is that particular item for the way that I mentored?"

Scale: Very Much 5 4 3 2 1 Not Applicable Not at All

1. Mentor as Teacher/Coach e.g. I provided instruction in specific knowledge and skills necessary for successful job performance ____
2. Mentor as Role Model e.g. I provided many opportunities for the CGTA to observe my professional behavior, how I got things done and/or allowing him to observe me in my classroom ____
3. Mentor as Developer of Talents e.g. I challenged the CGTA to assess his special abilities and assisted him in improving and refining those talents ____
4. Mentor as Protector e.g. I watched over the CGTA while he was learning "the ropes," and insulated him from any major problems__
5. Mentor as Counsellor e.g. I was an empathetic listener who was willing to give advice in all situations ____
6. Mentor as Advisor e.g. When the CGTA asked me, I gave specific recommendations as to a preferred course of action __________
7. Mentor as Supporter e.g. I encouraged the CGTA and looked for opportunities to praise him while being realistic when events did not go as planned ____

If you could pick just one, with which role function did you feel most comfortable? Explain why you selected this role function?
IV. Quality
A. Which adjectives would you use to describe the quality of your relationship with the CGTA?

B. Which adjectives would you use to describe the quality of your relationship with the other mentors?

V. Mentoring Outcomes
A. As a result of the collaborative mentoring experiment, do you feel that you have increased or improved your skill level in your own classroom? Please explain your answer.

B. Have you ever shared that skill/technique with another colleague?
   Yes ___  No ___  N/A ___

VI. Comments
If you have any comments that you would like to make concerning the mentoring program you just participated in, please feel free to do so at this time.

Appendix E
IEPM PERCEPTIONS OF THE UNDERGRADUATE STUDENTS

"In the U.S., students have choice of teacher, in China we don't think of what we prefer."

"Some students tell you what they feel and I don't like that."

"Person-to-person, the students can understand and I can understand them. But in the total class, if I give a special talk, that is difficult."

"Students in China do not normally make friendships with professors."

"Some students look for the easier way to do the problems and some cannot answer the question so they cheat."

"When they cheat they will get the right answer, but they will not use the correct principles for solving the problem. They are interested in getting a higher score but they don't understand."

"Some American students think creatively, sometimes they do not get the right answer because of error, because they base it on the wrong principle and that's O.K.."

"American students do not have understanding of how to relate to people with differences."

"One of the problems that we face in our country is that Chinese education does not motivate the students because it is a socialist country."

"If you embarrass the student they will be shy."

"You must give the students as much encouragement as possible."

"If a student does not understand, I do not humiliate him, but I ask him how I can help."
"If students do not understand Chemistry, I always feel like it's my duty to help students who do not understand."

"In China, we treat foreigners with respect and make every effort to help them. In the United States, foreigners are not treated the same way, many times I feel alone, isolated so I go to my friends house."

"I think that Americans get along better because they speak the same language and share the same culture. They seem to find it very difficult to listen to people who are foreign, they don't want to take the time to listen. This is true even when Americans come to our country."
Appendix F
HELPING UNDERGRADUATE STUDENTS UNDERSTAND THEIR INTERNATIONAL GRADUATE TEACHING ASSISTANTS

1. Patience is an extremely important element when working with someone from another culture. A student's impatience may become a major stumbling block to the learning process.

2. Along with having patience comes the ability to listen carefully to what is being said. If you don't understand what it is that your TA is talking about, then paraphrase what you think he or she was communicating to you. If there is still some difficulty in understanding what was said, it would be wise to ask the TA to use an example to help explain the problem.

3. It is very helpful to the TAs if the students are culturally sensitive to them.

4. It is important for students not to overwhelm the TA with a large number of questions all at the same time. When this occurs, the TA may have difficulty processing the information. Be sure to make the questions short and to the point.

5. Be sure that you ask questions if you are uncertain about what your TA has said. Take time to visit with your TA during office hours. This one-on-one contact can usually help to improve communication and to clarify points that might not have otherwise been clear.

6. Make sure that you prepare for your class or labs ahead of time. Don't wait until just before class to do your assigned work. This type of preparation will only get you into trouble.

7. Be sure to have a command of the vocabulary; that will usually improve your chances of being successful in class.

8. If your TA is talking too fast, be sure that you politely ask that TA to slow down so that you can understand him/her.

9. If the TA is writing on the chalk board or on a transparency and the writing is difficult to interpret, please let your TA know. Perhaps some preplanning on their part may eliminate this problem.

10. Remember that your TA has probably not been exposed to the high tech innovative environment and variety of teaching techniques that usually occur in the American classroom. Most TAs want to adapt to the educational system in the U.S. but that takes time; so please give them the time.

11. Be sure that you speak slowly and clearly when talking with your TA, it makes it much easier for him/her to understand what you are saying.
12. Remember to use study partners, if that is allowed. Sometimes working together may provide opportunities to clarify points which might have gone unanswered. Continue to talk to one another on a regular basis.

13. If you don't do well on an examination or assignment, talk to the TA; maybe he/she can give some helpful hints to assist you in your study habits and preparation for examinations. Remember, it never hurts to ask.

14. TAs really do want their students to understand the principles and the processes that they teach. They do not look favorably on those students who just want answers once they get part way through the problem. Take time to prepare for the recitations, labs and classes. There is no substitute for preparation.

15. Do not prejudge the TA before you begin the recitation, lab or class. Too many times students automatically come to the labs with biases about TAs that create barriers to the learning process, and that's not fair to the TA or to the student.

16. If there is a language problem that cannot be resolved between students and the TA, then talk to the instructor of record for the class. Every TA is responsible to a specific professor for his/her class. Remember to try and resolve the issue first with the TA.
Appendix G
1. Be aware of the fact that your accent may be unfamiliar to many of your students, so speak slowly and give them a chance to get used to your accented English.

2. When you introduce yourself the first day, be sure to write your name on the board. You may also wish to tell the students what country you are from and why you are at O.S.U..

3. Students who understand a little about a person's culture and background are more likely to give that person a chance to succeed.

4. Let your students know that you care about them and are interested in them.
   a. You may wish to do this by suggesting that you would like the classroom to be a kind of partnership where both student and teacher have something to offer.
   b. It is alright to ask for your students' help in correcting any difficulties that you may encounter with the language.
   c. They can look to you for the expertise in the subject you are teaching.
   d. Working together, both can benefit from helping one another.

5. Make it clear to the students that you expect them to let you know when they don't understand something you say and promise to do the same for them.

6. If a student asks you a question and you don't understand, ask the student to rephrase it. You may also paraphrase the question back to the student just to make sure that you have the correct interpretation of the question.

7. Do not feel embarrassed if you cannot answer a question that a student asks you. Let them know that you are not sure, but you will find out for them or have the students locate the answer and talk to you the next day. Students respect teachers who are willing to say they don't know (some of the time), and they respect you even more when you get back to them with the answer.

8. Be sure that you pause often to ask the students if they are following you and if they have any questions.
9. During lectures make sure that you outline what you will be talking about on the board or on a transparencye. Make sure that you write or print and make the letters big enough so that those in the back row can see.

10. Provide students with handouts detailing the assignments and examinations. A detailed syllabus can prevent many of the problems that might occur in class.

11. It is important to understand that American students can be very aggressive in class by asking questions of their professors and challenging them to provide an answer. This is a typical method for helping the students learn the material and is not considered out of place or rude.

12. Make sure that at the beginning of each class your students understand what they are going to be doing for that period and what is expected of them.

13. Begin and end your class on time. Students are extremely time conscious, especially when they must walk to their next class which might be halfway across the campus.

14. Be available outside of class. Establish office hours and make sure that everyone knows what those hours are.

15. Try to learn your students' names as soon as possible. Students appreciate teachers who know their names.

16. Sit in on other undergraduate classes to see how the instructor or TA teaches. They may give you a different perspective on what effective teaching looks like.

17. Ask your students to evaluate you as often as possible, so that you might have feedback on the learning environment in your class and how effective you are as a teacher.

18. Be careful not to talk to the chalk board while you are writing on the chalk board. Many professors have a tendency to do this, and it becomes very distracting to the students.

19. Make sure that you practice your presentation before you present it to the students. This is helpful for several reasons: organization, pronunciation, pacing and timing. If it is possible, have a friend listen to you and have them evaluate your presentation.

20. Don't be afraid to smile and maintain a sense of humor.

21. Don't ever be afraid to ask questions of your peers or professors.
Appendix H
LIMITATIONS/DELIMITATIONS AND DEFINITIONS

Limitations

There are four limitations to this study:

(1) The sample population is small so generalizability of the results will be limited.
(2) The success of the interviewing process with the Chinese teaching assistants is contingent upon the interviewer's ability to communicate each question.
(3) Since observations are part of the instrumentation for data collection, the principle investigator must rely on accurate feedback from the IAPMs and the IEPMs.

Delimitations

The following list identifies the delimitations in this study.

(1) There is no attempt to generalize the results of the findings to other cultures or cultural groups.
(2) This study will be limited to a selected group of novice male Chinese Graduate Teaching Assistants, American graduate students and randomly selected undergraduate students who are taking Chemistry 105 during Winter Term, 1991.
DEFINITIONS

COLLABORATION - it is a relational system, which utilizes mutuality or shared interests, parity and reciprocal interaction between participants. All participants act as a resource for one another.

CULTURAL MEDIATOR - an individual that acts as a mediator between two cultures.

CULTURAL PLURALISM - characterizes a society in which members of diverse cultural groups are free to maintain their own identity. It is also characterized by the desire for cultural sensitivity.

CULTURAL SOCIALIZATION - explores the practices and attitudes of the department, along with other elements of the university.

CULTURAL SYNTHESIZER - a person who attempts to resolve cultural conflicts in a spirit of mutual growth. A form of cultural fit.

CULTURAL TRANSLATOR - a person who accurately represents one culture to another in order to increase cross-cultural knowledge and minimize the suspicion which arises when cultures interact.

IAPMs - refers to Intracultural Peer Mentor and specifically refers to the five Chinese Graduate Teaching Assistants in the Chemistry Department at Oregon State University.
IEPM - refers to Intercultural Peer Mentor and refers specifically to the three American graduate students from the Mentoring Research Project at Oregon State University.

IGTA - refers to international graduate teaching assistant.

MENTOR - an individual that nurtures and assists others. He or she serves in a variety of roles to facilitate professional and personal growth.

MRP - refers to the Mentoring Research Project at Oregon State University which designed and implemented the Peer Collaborative Mentoring Program for International Graduate Teaching Assistants.

PCM - refers to Peer Collaborative Mentoring.

ROLE SOCIALIZATION - involves learning the functions, expectations, and requirements of a new role and developing an identity for performing that role.

SPEAK - refers to the Speaking Proficiency English Assessment Kit, which is normally used in determining how proficient foreign students are in speaking English.

TQM - refers to total quality management. TQM advocates the following principles: (1) attention to effects and outcomes; (2) accountability to the customer; and (3) process orientation or attention to detail.
TSE - The Test of Spoken English, like the SPEAK Test is normally used to determine how proficient foreign students are in speaking English.

XENOPHOBIA - a fear or dislike of foreigners.