Teaching with Graduate Student Instructors
in Large Enrollment Courses

Proceedings of a Faculty Seminar
Sponsored by
the Committee on Graduate Student Instructor Affairs,
an Advisory Committee of the Graduate Council,
and
the GSI Teaching & Resource Center
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Table of Contents

Preface

During January and February of 1993, 29 faculty and administrators representing 21 disciplines at the University of California at Berkeley contributed to a series of discussions on faculty-graduate student instructor (GSI) collaboration in large enrollment courses. This faculty seminar, which met for twelve hours over a three-week period, addressed an issue of increasing interest and concern. For, while the national emphasis on teaching in higher education has grown, a mounting budget crisis in the state of California has effectively stalled many developing efforts to enhance mentoring programs, as faculty and administrators have had to expend considerable effort and energy simply to preserve existing resources.

In this adverse economic climate, faculty have struggled to meet increasing expectations for teaching, research, and service, even as their workloads come under greater scrutiny. Concerns about university teaching have been further fueled by a newly released book, excerpted nationally, in which educational researcher Martin Anderson roundly criticizes the use of teaching assistants for instruction of undergraduates and decries that they are academia's "shabby secret."

GSI-led laboratory and discussion sections serve several important roles at Berkeley. Besides filling direct teaching needs, sections provide undergraduates with the personal contact and opportunity for critical discussion which are severely limited in large enrollment courses. GSI positions provide financial support and the essential teaching experience needed to prepare graduate students for their future careers in academia.

It was with these considerations in mind that the GSI Teaching and Resource Center at Berkeley initiated a seminar featuring the front-line faculty who work with GSIs but who, in most cases, have had no formal preparation to teach others to teach. The seminar focused on large enrollment courses, which reach the largest numbers of undergraduates and typically employ anywhere from 5 to 50 GSIs. Though frequently under-used for this purpose, such courses provide an unparalleled opportunity for providing large groups of GSIs with pedagogical training in their discipline.

This paper describes the proceedings of the 1993 faculty seminar. Its purpose is to reflect the spirit of the meetings and to record the contents of the various sessions in chronological order. Chapter 1 provides a brief sketch of the seminar's historical background. Chapter 2 describes the highlights of the seminar's plenary session, which took a candid look at teaching at the University. Chapter 3 summarizes the keynote for the "working" part of the seminar and summarizes participant reaction to a faculty-GSI dilemma.

Chapter 4 includes a faculty discussion about the elements of good GSI teaching during a workshop on the use of classroom observation. Chapter 5 summarizes a facultyroundtable discussion about effective practices in supervising large numbers of GSIs.

In Chapter 6, former Berkeley GSIs (now new faculty themselves) reflect on their own teaching experiences at Berkeley and offer recommendations for how departments might improve the teaching preparation available to graduate students. Chapter 7 summarizes the main themes that emerged during the working portion of the seminar, and Chapter 8 describes the seminar's concluding session, which re-examined the current state of teaching at Berkeley and offered some candid and thoughtful insights concerning future teaching practices.

Chapter 1
History and Background

This unique seminar broke ground on January 24, 1993 -- just four days after the conclusion of a campuswide strike initiated by the Association of Graduate Student Employees (AGSE) in an attempt to gain recognition as the union representing all graduate student instructors (GSIs) on the Berkeley campus. Given the climate on campus, the timing of the seminar was fortuitous. Plans for the seminar, one of several projects undertaken by the GSI Teaching and Resource Center to promote teaching preparation and quality instruction by GSIs, had actually been in the works for well over a year. The idea for the seminar had sparked the interest of members of the Graduate Council's Advisory Committee for GSI Affairs as a means by which they could actively engage faculty colleagues and administrators to focus on concrete ways to improve teaching practices campuswide. The opportunity to bring together faculty who teach with GSIs for the express purpose of critically examining the teaching in large enrollment courses was of particular appeal to the committee, who recognized "front-line" faculty instructors as the single greatest resource and focus for graduate students as they prepare for careers as professors.

Having decided to launch the new project, committee members, working with the GSI Teaching and Resource Center, discussed several potential formats, eventually settling on a seminar that would involve a series of working meetings highlighting particular points of impact for faculty teaching with GSIs. A decision was made to gear the seminar toward teaching in large enrollment courses, since these courses reach the largest numbers of undergraduates and employ the largest numbers of GSIs. Because they wanted to seek out the expertise of colleagues familiar with the challenges of large courses, committee members extended special invitations to faculty with experience in this area, although those new to teaching large enrollment courses were also encouraged to attend. To maximize contact with seminar participants, enrollment was limited (to twenty or fewer participants). The faculty committee members gave generous quantities of time and advice to the GSI Teaching and Resource Center to help build a curriculum and participation model around the interests and needs expressed by faculty.

In devising a curriculum, planners looked to feedback solicited at Spring and Fall Meetings from the departments' Faculty Advisors for GSI Affairs and Professional Trainers of GSIs. At these meetings, faculty members from each department on campus gather to discuss policies with the dean and associate dean of the Graduate Division, and to bring departmental concerns related to GSI affairs to the attention of the GSI Advisory Committee and GSI Center. Based on these discussions with faculty colleagues, committee members identified three themes of common interest and concern. In his opening address to the plenary gathering of the faculty seminar, Professor Jeffrey Reimer of the Department of Chemical Engineering, the advisory committee chair from 1991-93, summarized these themes by giving them the acronym CBS:

> The "C" stands for community; our fellow faculty members do not feel connected to a
> community of colleagues who are themselves concerned about teaching and working with
> GSIs. "B" is the broader context; this perception of lack of community occurs within a

broader perception that there is little university-wide support for teaching and preparing graduate students for the professoriate. Finally, there is the "S", for security, and here I mean the security that comes with knowledge. Even among those who are concerned with teaching effectively with GSIs and with mentoring future colleagues, few feel they have much to offer anyway.

These three concerns helped to shape the seminar's curriculum. In response to requests for a greater sense of community, Professor Reimer, together with Joseph Cerny, dean of the Graduate Division, sent invitations to faculty who offered courses that reached large segments of undergraduates, reasoning that these individuals represented the potential nucleus of a working community. Seminar planners devoted considerable forethought to discovering a means by which the working group's esprit de corps, energy, and creative ideas might then inspire a wider audience. To this end, a publication chronicling the seminar's proceedings was planned. It was hoped that such a publication would allow the creative insights and suggestions of the working group to prompt a dialogue in an even wider community of faculty, administrators and students -- both at Berkeley and nationally.

The second concern -- that teaching merits insufficient attention, recognition or reward -- was quite familiar to seminar planners. This broad perception of research as a richly valued endeavor carried out by those who can, and of teaching as the refuge of those who cannot, is deeply entrenched at major research institutions. Having encountered these attitudes time and again at Berkeley, committee members brought their concerns about the impact of this widespread perception to the attention of those most identified with the predominant ethos at the University -- its top administrators. Among those responding to the call to participate in the seminar were Carol Christ, provost and dean of Letters and Sciences; Nicholas Jewell, chair of the Budget and Interdepartmental Relations Committee; Christina Maslach, co-chair of the Student Life Committee of the Academic Planning Board; David Bogy, chair of the Graduate Council; and Joseph Cerny, provost for research and dean of the Graduate Division. Both the provost of Letters and Sciences and the Budget Committee chair agreed to address candidly the value of teaching and working with GSIs at Berkeley -- past, present and future.

The third concern -- the lack of security that accompanied faculty members' beliefs that they had nothing of value to offer GSIs -- became the very heart of the seminar. Throughout the seminar meetings, faculty participants brought forward their questions, ideas and opinions on a wide range of issues. They engaged traditional and innovative approaches, methodologies and paradigms culled from the existing knowledge base on the topic of teaching large courses with GSIs. Finally, mixing their own experiences in large courses with those of others in the group, they derived and shared suggestions and recommendations. Subsequent chapters attempt to capture the wealth and diversity of information, activities and faculty contributions most central to the seminar's aim -- enhancing faculty-GSI collaboration in large enrollment courses.

With the agenda established, the last piece of business involved working to maximize the likelihood that the deliberations of the seminar's participants would have some substantial and lasting impact. Professor Reimer addressed this issue at the plenary session:

> I wanted to share with you some sentiments expressed in a thoughtful letter I received from one of our colleagues who will <u>not</u> be joining us for this seminar. His words were food for thought. In his letter, he conveyed strong skepticism about the utility of our undertaking. He worried that, just like those at a Bradshaw seminar, we would all join together and beat our breasts in sincere concern, only to return home to resume our dysfunctional dynamics. I would like to believe that our colleague, in this case, is wrong. We <u>do</u> aspire to accomplish something meaningful here. Indeed, we certainly do hope to learn from one another, to examine critically the practice of teaching with GSIs, and to disseminate the learning that culminates from our efforts. But we also hope to begin a process of examining and shifting priorities. I am not talking now about shifting priorities between teaching and research, but rather of shifting from thankless, draining work toward recognized, valued and collaborative scholarship. Whether this is a realistic goal for our group remains to be seen. Those of us who helped to plan this seminar believe that it is.

The seminar broke ground on a Sunday afternoon in January. In attendance were the core group of seminar participants, members of the GSI Advisory Committee and GSI Center, and top campus administrators, deans and council chairs. The opening session featured a lively, provocative and ultimately deeply introspective look at teaching and working with GSIs at Berkeley. Addresses from the provost of Letters and Sciences and the associate dean of the Graduate Division, each followed by dynamic faculty discussions, laid the groundwork for a memorable series of meetings. The plenary session and subsequent meetings are described more fully in the chapters that follow.

Chapter 2
The Setting: Teaching in the Culture of a Research University

Due to a stumbling economy, the University of California has experienced an unprecedented series of severe state budget cuts since 1991 -- cuts which have created significant strain for campus administrators, faculty and students. As the faculty seminar approached in January, 1993, budget concerns had drawn the attention of many faculty members away from more traditional and familiar academic pursuits and toward activities more directly concerned with how to preserve the caliber and integrity of academic life at the University. One of the seminar's chief challenges involved redirecting everyone's attention back toward an issue that inspired the seminar -- preparing the next generation of scholars to teach.

Nevertheless, to do so without examining the current context of teaching at Berkeley or the potential impact of the budget crisis on teaching would have been, in Dean Joseph Duggan's words, "excessively coy." Thus, the plenary session of the seminar brought together the core faculty group, Advisory Committee members, GSI Teaching and Resource Center staff, and several top campus administrators to candidly discuss the role and future of teaching, and of graduate student instructors, at Berkeley. Asked to speak at the plenary session were Carol Christ, provost of Letters and Sciences, and Joseph Duggan, associate dean of the Graduate Division.

At the request of the Advisory Committee, Provost Christ candidly addressed faculty perceptions about the value -- or lack of value -- placed on teaching at Berkeley. She also spoke frankly about how the budget crisis might affect teaching at Berkeley in the years ahead. Following Christ's address, Dean Duggan discussed the recently concluded graduate student strike, and provided some perspective about why the focus of this seminar was an important one. This chapter summarizes issues raised by Christ and Duggan, with excerpts from each speaker's address.

Provost Christ opened the plenary session with a wry comment that skeptics might mistakenly infer from the plenary session's location (the Alderwood Conference Center at Mills College, 5 miles south of Berkeley, in a retreat-like environment) that discussions of the topic under consideration (teaching at Berkeley) require a shroud of secrecy. She also promised to be candid in addressing issues brought to her attention by the Advisory Committee for GSI Affairs, and shared with audience members an excerpt from the committee's letter of invitation:

> Despite Ernest Boyer's recommendations in Scholarship Reconsidered, we do not believe that the scholarship of teaching is truly being reconsidered on our campus. The most recent and telling evidence for this surfaced...during our annual meeting with Faculty Advisers for GSI Affairs and trainers of GSIs from each academic department...where we heard strong sentiment that "until the University's commitment to teaching becomes <u>real</u>, nothing's going to change" and that "faculty need to revolt if teaching is to account for anything." In light of the recommendations of the Pister report on faculty rewards, we

were particularly moved by concerns raised about faculty involvement despite the lack of rewards, and about insufficient faculty recognition for teaching in campus governance.

Given that teaching is one of the fundamental pillars of tenure review, Christ admitted to being somewhat puzzled by the committee's remarks that teaching is not valued, that is,

> until I recalled an interaction I'd had with my department chair while I was still a young assistant professor. He'd stopped me in the hallway one day to ask how things were going, and I said "Great -- I'm really learning how to teach." To this, he frowned, shook his head and said "I must remind you that your tenure review will be coming up soon."

Christ went on to discuss the tenure process and told the gathering that they would be surprised how often faculty with impressive research credentials have had step- promotions delayed or denied because of inadequate evidence of teaching excellence. She also made several suggestions for changes in the tenure process that would increase the weight given to substantive teaching accomplishments.

Turning her attention to the seminar's central focus, teaching with GSIs in large enrollment courses, Christ outlined the University budget and explained how GSIs fit into the budget picture. She then offered a stark critique of current patterns of GSI use at Berkeley:

> What are the functions of the GSI position? The functions are (1) financial support; (2) teacher training; and (3) delivery of instruction. I'm going to argue that we don't do any of the three as well as we might.

> First, regarding financial support, our method for handing out GSI appointments (on a year by year -- or in some departments, semester by semester -- basis) doesn't provide graduate students with the financial security they need through their degree in the program. This is particularly true in departments where there are fewer positions than there are applicants for the positions. Further, the current system of allocating GSI-ships does not allow us to put together multi-year packages, as do many institutions with whom we are competing.

> Second, I don't think GSI appointments are used very adequately to promote teacher training. Being a section leader certainly teaches you some things, like running discussions and grading papers. However, some of the most important skills in learning to teach are not learned by leading sections. Putting together a class, conceiving a course, having a continuing intensified relationship with a group of students -- the things at the very heart of teaching -- are not learned by being a section leader. During a phone conversation with Joe Duggan yesterday, I used the word "infantalizing." Though that may be a bit too strong, I don't think that having GSIs serve as section leaders for four to six years, as some departments do, fosters their development as teachers.

Third, concerning the delivery of instruction, I'm not convinced (though many of you may argue with me on this point) that sections are the most useful deployment of a very large teaching resource. Relationships are not sufficiently sustained to develop the cohesiveness of a good class. I know that when I taught a large lecture course with sections, it was really difficult to make the students keep coming. Why didn't they keep coming? I think it's because it's not possible, meeting just one hour per week with 30 students, to develop the kind of cohesiveness that good classes have. It may also be that sections do not have the intellectual independence or coherence of a class.

About once per month, I meet with an undergraduate consulting group. They are very committed students, quite dedicated to their departments, and I ask them their advice on all kinds of subjects. In particular, I ask their advice on the budget. I lay everything out in dollars and cents, pose the problems I have to solve, and examine the results. I decided to try an experiment at one meeting last year and asked the group "Given a cut this size, could you tell me (on a slip of paper) what you'd cut, if you were in the driver's seat in your department? What could be cut from your department rendering the least harm to what's valuable in your education?" Their answers really startled me. It was quite a learning experience. What they told me -- and I should say that I spent a subsequent session talking further about this because I was so startled by their response -- was that in most cases, they didn't see their sections or discussion groups as valuable. Keep in mind, these are good students, ones who really care about their departments and majors.

I should say that there were several exceptions, including students in math, in economics, and in classes where discussion groups focused on problem sets. However, students in discussion groups where the task was to discuss lectures, or readings separate from lectures did feel this way. I'm not saying that they'd vote to do away with discussion sections if we weren't in a budget crisis, but given trade-offs and relative to other sacrifices, they didn't feel sections were educationally valuable experiences for them. My feeling is that we'd be better served by giving GSIs more independent classes to teach. I've been very impressed by the success of History 103 courses. History devotes a substantial portion of its GSI allotment to senior seminars taught by the GSIs themselves. I think this provides a wonderful teaching experience that really shows them -- teaches them -- what teaching is like, while giving undergraduates the wonderful experience of another small class.

I think the message I want to leave with you here today is that we're going to need to re-think whether the use of GSIs to lead sections in large courses makes the best and most effective use of this resource.

Discussion following Christ's talk was quite lively. Many faculty were struck by the pointed revelation that many undergraduates find current lecture/section arrangements ineffective, and grew concerned over the possibility that traditional large course arrangements may undergo changes in the future. Jack Potter (Anthropology) argued that while GSI-undergraduate contact in

sections may not provide the same sense of coherence as does a regular course, for many undergraduates, sections represent the only personal contact they receive on a week-to-week basis at the university. Others argued that such contact may be particularly important for lower division students, who may have been underrepresented in Christ's consulting group.

Following the discussion of Christ's plenary address, Joseph Duggan addressed the group. Duggan had been invited to speak both about the recently concluded graduate student strike and about preparation of graduate students for the professoriate. In opening his address, Duggan provided an overview of graduate student life at Berkeley:

> The average age of entering graduate students at Berkeley is 27. (Many) have...given up a job that paid decent wages, for example, to take a GSI position that, even if it is only a half-time commitment, gives them only enough money to scrape by for six of the years it takes to secure the training and credentials needed for the profession. Perhaps worst of all, graduate students are under the supervision of a faculty member who is at one and the same time employer and potential or actual dissertation director, patron and critic, protector and potent threat to career, whom they adulate and fear at the same time.

He went on to examine ways in which the University and the graduate student union had been working before the strike to promote graduate student welfare, discussing fee waivers, job descriptions, concern with hours spent teaching, and mediation and grievance procedures for work-related conflicts. Duggan emphasized that:

> Seeing to it that GSIs do not teach an excessive number of hours is not only in their best interests, but in the University's, since students who are spending too much time teaching will not be able to progress at a satisfactory rate toward their degrees. One of the most important tasks of faculty in charge of GSIs is to teach them how to complete their work in the minimum amount of time necessary to do a good job at it.

He went on to explain that this type of skill is not simply an expedient for surviving graduate school, but that it is basic to the careers that most graduate students enjoy after leaving Berkeley. According to Duggan:

> A study published this year by Ann MacLachlan of our Educational Career Services traces the placement of Berkeley doctorate-holders during the 1980s. MacLachlan found that 56% of Berkeley Ph.D.'s were employed in academic positions. The figures among broad disciplinary groups represented here today are 88% in the Humanities, 58% in the Life Sciences, 52% in the Physical Sciences, and 71% in the Social Sciences. Using the Carnegie categories of institution, MacLachlan shows that of those hired in academe, 54% were employed by Research I universities, and 6% in Research II universities. Slightly more than half were employed as assistant professors, and 22% were in postdoctoral positions which led to later professorial appointments. Of the total number of Berkeley Ph.D.'s, 38% are actually engaged in teaching in their first career position.

Referring to a 1991 study by Robert Boice entitled "Quick Starters: Faculty Who Succeed," Duggan noted that beginning assistant professors spend well over half of their time on teaching, but only about 15% of their time on research. He suggested that when mentoring faculty get involved with graduate students' teaching, they help them to become more productive writers and researchers during their early professional careers because at that point they will have to spend less time on the mechanics of teaching. Duggan took particular note of Boice's finding that learning to spend some hours reflecting on teaching decreases, rather than increases, the amount of time spent on teaching. He suggested that in the context of one's career, discussing teaching with a faculty mentor in graduate school is the most efficient and effective step toward good teaching.

Turning next to the recent book Impostors in the Temple, Duggan took issue with Martin Anderson's depiction of GSIs as "the shabby secret of higher education; children teaching children."

> Teaching, says Anderson, should be done by professors. Who could disagree? But Anderson skips a step. If, as he suggests, the teaching assistantship were to be abolished, brand new assistant professors would walk into the classroom with no teaching experience behind them and the problem would simply be shifted to the next higher level. Most assistant professors would have no idea whether they had the slightest aptitude for the teaching profession, never having taught. The solution to the problem is not to abolish the offending institution, but to make it a better institution. People like you are in a position to exert tremendous influence on the quality of teaching, not just here but, through your students, in American universities in general.

Duggan concluded by noting that the Graduate Division's GSI Teaching and Resource Center, in discussions with graduate students about their perceived educational needs as GSIs, found that these students almost universally wanted more contact with supervising faculty and wanted formal and systematic departmental training programs. Bringing the day's program full cycle, Duggan noted:

> Obviously for these needs to be filled in the present context of successive early retirement programs and budgetary cutbacks, some very creative solutions will have to be devised

and reiterated that by bringing together those who work closely with GSIs, faculty with particular expertise and experience, and administrators closely involved in promoting GSIs welfare, such solutions may emerge through the process of creative exchange.

Chapter 3
The Faculty-GSI Teaching Relationship

The plenary session examined the institutional and contextual issues surrounding teaching and the role of GSIs at Berkeley. Once this backdrop had been drawn, attention turned to several concrete issues involved in faculty's work with GSIs. Among the topics considered in subsequent meetings were: useful practices in working with large numbers of GSIs; common impediments to successful teaching relationships; and reasons behind, and solutions to, commonly encountered problems. The group worked from an established agenda that highlighted different facets of teaching with GSIs. James McHale (Psychology/GSI Teaching and Resource Center), Jacqueline Mintz (Comparative Literature/GSI Teaching and Resource Center), and Jeffrey Reimer (Chemical Engineering/Advisory Committee for GSI Affairs) introduced the seminar's various topics and provided summaries, while participants debated pertinent issues and responded to the perspectives of colleagues and GSI Teaching and Resource Center staff.

Those attending these working meetings focused on faculty-GSI teaching relationships in large enrollment courses for nine hours over a three week period. This segment of the seminar began with an examination of the interpersonal and organizational issues involved in teaching with GSIs. The keynote for the working segment of the seminar was delivered by the chair of the Committee on Teaching for 1992-93, Frederick Crews (English). In his address, Crews discussed the evolution of his own philosophy of teaching with and supervising GSIs, acknowledged some of the difficulties that inevitably arise in this work, and discussed what he saw as the essential components of effective supervision. Some of the highlights from Crews's address follow:

Philosophy of teaching

> •"I value the upholding of standards, the eliciting of self-development, and the addressing of students on the level of their perceived knowledge."

> •"I am also concerned that GSIs exercise tact in dealing with students in their charge."

Apprenticeship and training

> •"Competing time commitments are a never-ending dilemma. We saw this in our department when GSIs opposed a required training course because they 'have too many requirements already.' Happily, our current graduate students do want this requirement, and we are going ahead with it."

> •"I believe that apprenticing with an experienced teacher is TA training, and is every bit as valuable as -- if not more so than -- a formal training course."

•"Faculty members play an important role in insuring 'quality control' by norming grading, by carefully observing and reviewing GSIs' work, and by holding frequent conferences."

•"Group supervision (in general meetings for the conduct of the course) and individual meetings (for one-to-one contact) are complementary processes that foster both successful courses and teaching growth among GSIs."

•"Close faculty-GSI contact can give GSIs a model not just of day-to-day instruction but of the total planning and execution of a coherent course."

•"Occasionally, necessary discomfort can arise when a new GSI's work requires firm correction."

•"Collaborative teaching efforts are a bi-directional process, with the 'mentor' frequently able to learn from GSIs, who tend to have closer contact with the students and who can see where the instructor is being less than clear or fair."

In the discussion following Crews's presentation, seminar participants considered several different definitions of GSI training, ranging from simple emulation of professors, to departmentally-based teaching seminars, to teaching an undergraduate course of one's own as a graduate student. Some members of the group related anecdotes of how they had themselves been influenced by master teachers with whom they worked when they were GSIs, maintaining that the experience of being a GSI in a good course was every bit as good as formal courses on teaching. Others agreed that models were helpful but wondered whether watching and emulating a master teacher could actually be expected to promote teaching development in most GSIs. Some felt that it would be helpful to outline for GSIs some of the things that even master teachers must do (preparation, organization, careful course planning and attention to student perspectives and needs), so that GSIs would not be led to believe that great teaching involves only charisma and theatrics.

Crews maintained that the most potent combination is one involving emulation plus contact. This combination enables GSIs to see that professors really do have objectives and goals for their students each week. Crews, George Chang (Nutrition) and Advisory Committee member Orman Granger (Geography) provided personal examples of how they had used debriefings with GSIs to ask questions like "What did I do that you wouldn't do?" and "What did I do wrong?" Such questions allow GSIs to evaluate critically and make a comparative study of what they saw the course instructor doing.

Leon Litwack (History) was asked about the History Department program in which GSIs teach their own courses. Litwack described the program's organization and explained that such courses are taught by advanced graduate students under the supervision of departmental faculty. The GSI-led seminars represent the culmination of a graduated set of teaching experiences in which GSIs move from being true assistants toward more independent responsibilities as they advance as teachers and graduate students. Thus, the departmental plan scaffolds GSIs upward and toward

more autonomous teaching roles, in a manner advocated by Carol Christ during the seminar's plenary session. The notion of a departmental plan and graduated teaching experiences captured the interest of several participants, many of whom who debated the feasibility of such a plan in their respective departments. This idea continued to prompt discussion throughout the seminar.

Having sketched the broad outlines of the faculty role in working with GSIs, participants turned their attention to several issues faculty members confront in working with groups of GSIs in large courses. A series of dilemmas was presented in the form of a case study (see Appendix A: The Case of Joe Goodman) in order to marshall the diversity of beliefs and perspectives represented among the faculty in attendance.

Jacqueline Mintz authored the case, which was an amalgam of actual situations described by a group of GSIs from several campus departments, and she led the discussion following. She began by asking what issues confronted the story's protagonist, Professor Joe Goodman, who had run into an unanticipated and complex turn of events with his GSIs. Faculty responses to the case were diverse; a sampling of the issues enumerated by participants follows:

•He never defined the purpose of sections. What are sections for? What should happen there?

•He now has to deal with a GSI who has assumed more authority than was called for.

•He missed two lectures, and is probably experiencing guilt over having abdicated responsibility and ownership of his course.

•He has to figure out why it is women who are dropping from the section, and adding into the sections of female GSIs.

•He has to be concerned about overwork of the female GSIs in their sections.

•He'll need to figure out whether the women GSIs may have encouraged this change.

•There may be an ethnicity issue involved in how Ben sees male-female relationships and authority. Joe will also need to be sensitive to potential ethnic/gender issues with the GSI Anna Wong.

•Is there a grievance procedure? How does he deal fairly with a GSI he is close to? What's the best way to proceed sensitively with a woman who is probably worried about jeopardizing her own career?

•He may need to justify why he chose Ben as head GSI when Anna had previous experience at another school.

•He'll have to deal with not having outlined the responsibilities of the Head GSI role to others.

•He'll have to overcome his history as a poor <u>listener</u>; these things shouldn't be coming as a surprise to him.

•I'm sure he's up against the pressures of faculty workload -- what kind of impact will devoting extra time to these teaching dilemmas have on the immediate imperatives of his research and other duties?

•He may be accused of favoritism.

•He may run into some problems later figuring out how much authority to give as opposed to how much to keep.

•He'll need to re-examine his choices about what should happen in his class when he's away. He'd probably be better off asking Ben or others to lecture while he's away; it's a good experience.

Mintz next asked what values, assumptions and expectations might have influenced decisions taken or not taken by the principals in the case, culminating in the impasse reached. Participants hypothesized about assumptions held by both Joe and Ben:

•Obviously, Joe was favorably impressed by Ben's energy, and assumed that his excellence in research would carry over to teaching.

•I think he also assumed that Ben's intellect would carry over and inspire his teaching. In my experience, intelligence and teaching abilities rarely go together.

•I think Joe's model of working with GSIs smacks of exploitation.

•Joe's idea is that sections should only be centered on what he does in lectures. He sees his sections only as "quiz sections."

•Like many of us, Joe seems to equate learning with acquiring the faculty member's "mental software." He doesn't seem to be aware that no single mode of communication is ever sufficient.

•By developing and handing out extra material, Benjamin is emulating (his) professor.

•Joe implicitly discourages open communication by not inviting questions. He doesn't allow questions during class, and expects his GSIs to address student questions.

•There is evidence that Joe expects the female GSI caller's questions to be foolish or "simple."

•Joe has conveyed to Ben and his other GSIs a philosophy that "covering" material is the same as teaching; Ben probably picked up on this. There's also evidence that Joe doesn't allow any room for change in what he teaches.

Mintz concluded by asking participants what could be done to solve the problems and to prevent them from recurring. Among the replies:

•Well obviously, he needs to talk to Benjamin. He's probably pleased that Benjamin filled a void, but not so pleased that he didn't check with him.

•He's going to need to confront the issue of gender.

•He's going to need to talk to everyone involved. The problem is a problem for the whole teaching team.

•Depending upon the ethnic issues involved, it might make sense for Joe and Benjamin to have a "man-to-man" talk.

•Joe should really examine how his teaching style affects both GSIs and students.

•Next time, he's going to need to be much clearer in defining everybody's duties.

Nearly all those in attendance readily identified with the case, and Seth Roberts (Psychology) asked who it was based upon. Everyone was surprised to learn that the case was fictitious. Mintz explained that the case contained aspects of difficulties encountered by faculty and GSIs from many departments at Berkeley, including those represented by seminar participants. She suggested that this may have been why the case had such an impact, since it moved beyond rhetoric and heresay to include verifiable events and assumptions about teaching. Mintz also highlighted the utility of the case method as a teaching strategy that faculty could share with GSIs. The case study received excellent reviews from faculty.

In drawing the second meeting to a close, seminar coordinator James McHale summarized the main points developed during the first two meetings. He noted two different "models" emerging -- an individual "course apprenticeship" model, and a broader departmental model. Within the course apprenticeship model, several options -- ranging from GSI emulation of professors to more formal structures (regular meetings between faculty and GSIs that covered both administrative issues and teaching strategies and dilemmas) -- had been raised. Discussions of departmental models centered on GSIs moving through the ranks in a pre-planned fashion and finishing graduate teaching careers with an autonomous section or course assignment. McHale also

highlighted a point made by Ned Johnson (Integrative Biology) concerning interdepartmental differences, noting that the viability of a departmental teaching plan might be expected to vary in departments with different expectations about the minimum and maximum number of courses GSIs could/should teach, the diversity (or lack of diversity) in the roles available to GSIs, and departmental ethos about time to degree and balancing teaching with research.

In consolidating a second emergent theme -- that GSIs' faculty supervisors play an important role in preparing them for the transition to their first job -- McHale recalled two key points from the plenary session. The first involved Carol Christ's observation that the work GSIs do as discussion leaders does not prepare them to teach independent classes. The second concerned Joe Duggan's review of Boice's (1992) article and suggestion that adequately preparing graduate students to teach in graduate school can save them countless hours and work following the transition from graduate school to positions in academia or business. Recalling Boice's finding that new faculty devote over 50% of their time to learning to teach and to developing courses, and only 15% of their time on research, McHale reiterated that faculty who help graduate students acquire basic teaching skills during graduate school enable them to get off to running career starts.

> Of the questions central to this seminar, this one may be the most important. If we work from this course apprenticeship model -- a model in which faculty serve as teaching mentors for GSIs -- then what sorts of things could and should we be doing to help GSIs along?

Intimately related to this question was a third major topic, raised by Frederick Crews in his presentation: how can faculty members insure quality control across multiple laboratory or discussion sections of the same course? Crews argued that it is important to calibrate individually with GSIs. However, since it is not at all clear how such calibration can best be accomplished in large courses with many GSIs, this issue was tabled for discussion at a subsequent roundtable discussion (see Chapter 5) chaired by Alexander Pines, instructor of Chemistry 1A (50 GSIs).

McHale concluded by pointing out that several other models (besides the apprenticeship and departmental models) had come up during the first two seminar meetings: teaching as "coverage"; students as receptacles of knowledge; teaching that rewards and encourages students to think as their instructors do (since teaching students to take on the instructor's style is easier than diagnosing and developing theirs); GSIs as extensions of professors, striving to help students acquire the professor's "hardware"; and content learning vs critical thinking. He noted subtle ways in which conscious or unconscious models affect faculty-GSI relationships, and cited Anna in the Goodman case, whose small group exercises never became part of section structures because they differed from Goodman's agenda.

In pulling these themes together, McHale noted that the focus of the seminar was moving progressively inward. The plenary session (Chapter 2) examined the institutional and contextual issues surrounding teaching and the role of GSIs at Berkeley. The seminar's second session (this chapter) considered some of the "real-life" interpersonal and organizational issues involved in this

work. Subsequent meetings would turn to the particulars of teaching with GSIs: what roles GSIs play in different courses; what faculty ask them to do to help students meet course objectives; and what faculty can, and do, do to assist them. These topics are examined more fully in the following chapters.

Chapter 4
Guiding teaching development among GSIs

During the first two seminar meetings (Chapters 2 and 3), faculty members began developing two topics -- an individual apprenticeship model (focusing on mentoring with GSIs in single courses) and a departmental model (providing graduated teaching experiences over time) -- that became the seminar's central themes. In the seminar's third session, faculty members examined more closely the individual mentorship/ apprenticeship approach, discussing (a) the roles that GSIs play in large undergraduate courses; (b) what they ask GSIs to do in the lab or discussion classroom to help students achieve established objectives; and (c) how they might be able to assist GSIs in their efforts.

The focus of this chapter is on teaching itself. It summarizes seminar faculty's views on the essentials of good teaching, drawing on a discussion that followed a videotape exercise. Prior to this working session, seminar participants had completed an abridged version of Cross & Angelo's (1992) Teaching Goals Inventory (see Appendix B) to raise their consciousness about personally held teaching beliefs and goals (Chapter 7 includes a discussion of some of the survey findings). Afterwards, during the videotape exercise on Day 3, they viewed a taped GSI-led section and identified specific areas of instruction in which the GSI might profit from helpful feedback and guidance. They then participated in a microteaching session conducted by Bettina Pohle (GSI Teaching and Resource Center), a senior GSI in the German Department at U.C. Berkeley, and observed a consultation with Ms. Pohle by Kal Sastry, Professor of Mineral Science and Materials Engineering. The microteaching exercise is also described later in this chapter.

At the beginning of the session, participants considered the following four questions:

> What do GSIs do in lab/discussion sections of your courses?
> What are your objectives in having them work with students in your course?
> What, ideally, would happen? What would constitute a successful section experience?
> What types of things would GSIs have to do to accomplish these objectives?

Because a diverse group was represented, the duties and responsibilities assigned to GSIs varied, both between and within disciplines. Some common features emerged, however. Among these were grading; consulting with students during office hours; and leading some form of laboratory or discussion section (e.g. walking students through lab practicals; problem-solving sessions; topical discussions). In certain disciplines, GSIs also worked with primary materials (historical documents, artifacts); led students on field trips; attended lectures; attended course organization meetings with other teaching staff; and gave guest lectures themselves. None of the faculty in attendance regularly provided GSIs with written job descriptions, because most felt GSIs were familiar with the duties before beginning their assignment via the department's oral culture. Nearly everyone in attendance also provided at least an informal pre-semester orientation for the GSI group.

Turning next to the components of "good teaching," faculty examined their own perspectives and concurred that a common goal for GSIs was that they encourage students to think critically about material. However, there was a lack of consensus as to how GSIs might be helped to do so. To focus the discussion, a structured stimulus was introduced so that members of the faculty group could ponder together how they might help a foundering GSI. Participants watched a brief excerpt drawn from a videotape entitled "The Good, the Bad and the Ugliest of Graduate Student Instructing," produced and developed by graduate students in U.C. Berkeley's Department of Mechanical Engineering. This exercise was chosen because most faculty members have never actually observed a live teaching performance by another teacher (Weimer, 1990). The segment of tape chosen for the seminar featured a GSI explaining the concept of momentum transfer to a group of students, and contained examples of both positive and negative teacher behaviors. Before viewing the tape, participants were asked to think about what they might say to the GSI, both in terms of what went well and what they saw as in need of improvement. These opinions were then solicited once faculty had watched the vignette.

Faculty comments about the teaching vignette fell generally into categories identified by Murray (1989) and others. These categories (and related teacher behaviors) were:

A.   <u>Rapport</u>
Addresses students by name

B.   <u>Ability to Engage Students</u>
Praises students ideas
Criticizes student errors
Asks questions of individual students
Asks questions of class as a whole

C.   <u>Enthusiasm</u>
Moves about, gestures
Makes eye contact
Smiles or laughs
Distracting mannerisms

D.   <u>Organization</u>
Uses outline/headings
Gives preliminary overview of lecture at start of class
Periodically summarizes

E.   <u>Clarity</u>
Defines new/unfamiliar terms
Writes key terms on blackboard

Stresses most important points/pauses/repeats
Repeats difficult ideas more than once

F.   <u>Pacing</u>
Dwells excessively on the obvious
Checks student understanding before moving forward with new material

G.   <u>Speech</u>
Appropriate pace and volume
Mumbles

Participants next discussed how the GSI might better accomplish his intended goal of explicating the process of momentum transfer, while at the same time promoting critical thinking. Among the alternative strategies identified were: (a) giving students the problem, having them work individually first and then pairing them up to compare answers, and finally, conducting the experiment to see who was right; and (b) giving different groups different sets of parameters and afterwards, working together to see whether a unifying theme could be identified.

Concerns were raised that feedback to GSIs can be offensive and elicit defensiveness. Several points were considered. Faculty felt that discussing the observation with the GSI ahead of time and providing suggestions and tips during the semester might create an atmosphere of support rather than scrutiny. Further suggestions included having the GSI provide a self-evaluation first (before the faculty observer says anything); praising what the GSI did well before providing any constructive criticism; and limiting suggestions for change to the 1-2 most important areas. Faculty reviewed a handout on "Observing GSIs" (Appendix C), and discussed whether instructional techniques should be suggested to GSIs during the feedback session itself, or at another time (e.g. during regular course meetings). There was some consensus that classroom visits and one on one feedback sessions were probably best viewed as a time to focus on improving some of the basic things GSIs <u>already</u> do in the classroom, rather than as a time to teach new skills.

Following the videotape exercise, participants were provided with an opportunity to apply some of the aspects of good teaching identified during the video exercise to another, very different classroom setting. Senior GSI Pohle conducted a beginning German lesson with the group, with participants serving as students. The microteaching exercise was chosen so as to enable faculty to simulate the role of students. A faculty volunteer (Sastry) observed the teaching lesson and afterwards tried his hand at providing feedback to Pohle.

According to the instructor:

> The goal of the micro-teaching session was to demonstrate a specific teaching method --
> the communicative approach -- as applied in beginning language instruction, with members

of the audience placed in the roles of student. I wanted to have the seminar participants experience and "witness" the process of language acquisition the same way it is experienced by students on their first day of class. By identifying with first year language students, participants could use their own "first hand experience" as the basis for an evaluation of the communicative method I used. My hope was also that participants would compare and relate their own teaching style to this very interactive teaching approach.

Pohle began the German 1 lesson by introducing the micro-teaching session. She asked "students" to arrange their chairs in a circle and proceeded to address them in German, introducing herself with a short phrase ("Guten Tag, ich heisse Bettina, Sie heissen...?") that ended with a question, thereby making it clear that she wanted students only to say their name. By using and inverting the same, more and more familiar sounding phrase, Pohle added yes/no ("ja/nein") to the question, having the "students" repeat only names or "ja" and "nein". She slowly expanded the exercise by introducing colors and names of clothing, using the blackboard only to write down vocabulary, while using pictures (magazine photos depicting men and women in various articles of differently colored clothes) to help students connect the sound of each new word to an image. According to Pohle:

> The crucial point of this beginning phase of language instruction is to re-confirm constantly the newly acquired knowledge. Thus, I kept integrating the identification of other "students" by name into the color and clothing exercise. Since this phase concentrates on understanding and identifying elements of the target language, rather than on producing them, most of the 20-minute session consisted of a relatively quick succession of questions and answers, always allowing the students to build on the just acquired knowledge.

Seminar participants were very involved with the session. The moment instruction began, all took on the role of student and reacted much as would students in their first language class. Pohle noted:

> The atmosphere was very relaxed, people seemed to sincerely enjoy the playfulness of this highly interactive method, while actually acquiring the first bits and pieces of a foreign language. The feedback I received from participants was overwhelmingly positive. I thought it was also interesting that, in the follow-up discussion, participants made the connection that every subject is, in a sense, a foreign language. Students can -- to a certain degree -- be approached in a more playful and interactive way, making use of their existing knowledge. I also noted that participants recognized that the effective use of simple materials, and the use of direct eye-contact with students at all times, were very positive points. I felt that the presentation stimulated some of the seminar participants to engage in a self-reflective evaluation of their own teaching methods.

Following the microteaching exercise, Kal Sastry provided feedback for Ms. Pohle. According to Sastry:

It's really important to see GSIs teach and to give them feedback. I found the feedback session to be very valuable. When I was providing feedback to Ms. Pohle, I tried to concentrate first on what went well, and then to suggest what might be improved. My experience has been that unless we're positive with GSIs, they often don't listen to what we have to say. I thought Ms. Pohle did an excellent job, and felt that my feedback session with her went very well. I really think more faculty should do it.

Following Sastry's remarks, James McHale summarized the session's main points. Faculty are often concerned that they do not have much of use to offer GSIs to help them develop as teachers. McHale pointed out that, at minimum, faculty play an important role in helping GSIs understand the importance of having (a) reasonable and finite objectives for each section; and (b) a game plan for which techniques to use to accomplish objectives.

The more GSIs know about available techniques, the wider the repertoire they will have to draw upon when problems in learning occur. GSIs also often come up with creative ideas of their own, which they can be encouraged to share in course meetings. The reader for this faculty seminar (Appendix D) contains an excellent article by Kain (1991), which gives some examples of how GSIs can develop lesson plans. Though this may not be feasible in all fields, GSIs can nearly always work collaboratively with the instructor as s/he is thinking through plans for given sections.

McHale also noted several active learning techniques for promoting critical thinking in students that had been seen and discussed during the seminar. Among the ones he noted were:

Think-pair-share (or cooperative learning) strategies
Interactive lectures (such as the "What constitutes good teaching?" session)
Problem-based case studies (such as the Case of Joe Goodman)
Simulation (such as the microteaching exercise)

Referring to a reference list of teaching techniques distributed to participants (see Appendix E), McHale noted that it was important that GSIs know not only about different teaching strategies, but also about how students learn. He called attention to an overview of different student learning styles in Paul Ramsden's Learning To Teach In Higher Education (the text used in the faculty seminar), and noted that participants had experienced one important distinction -- between imposed vs. discovered knowledge -- earlier in the session when they were asked to generate a list of GSI classroom behaviors instead of simply being handed such a list. He also underscored a final point highlighted during the session -- that of soliciting feedback from students themselves -- and pointed out that this was at the very heart of the philosophy expounded by the GSI Teaching and Resource Center and supported by Ramsden's Theory 3 (which highlights the active interplay between teacher and student learning).

As the discussion of individual mentoring drew to a close, attention then moved to mentoring groups of GSIs in large enrollment courses. This topic was discussed at a faculty roundtable, chaired by Alexander Pines of Chemistry, summarized in the next chapter.

Chapter 5
Group Supervision in Large Enrollment Courses:
A Faculty Roundtable

Participants: Kent Lightfoot (Anthropology); Wendy Sussman (Art); Jeffrey Reimer (Chemical Engineering); Alexander Pines (Chemistry; chair); Jacqueline Mintz (Comparative Literature); Vincent Resh (Entomology); Bettina Pohle (German); Leon Litwack (History); Ned Johnson (Integrative Biology); Paul Vojta (Mathematics); Kal Sastry (Material Science and Mineral Engineering); George Chang (Nutritional Sciences); Howard Shugart (Physics); Kenneth Craik (Psychology); James McHale (Psychology).

Large enrollment courses at Berkeley usually pair auditorium lectures with smaller lab/discussion sections. The sections provide lower division students with individualized contact and attention otherwise unavailable because of the logistics of the large lecture. Course instructors are sometimes hesitant to develop a curriculum for these sections beyond a broader ideal of giving students an opportunity to discuss or work through problems they may be having with the material. However, lab/discussion leaders (GSIs), in the absence of clear pedagogical directives from the course instructor, will underprepare, overprepare, flounder, or thrive, achieving wildly disparate results. Undergraduates grow upset and feel cheated when uneven content and quality of instruction prevails in different sections of the same course, and their discontent may spread to one or more GSIs in the course, the faculty member in charge of the course, or both. In extreme cases, pressure from students may cause a "splitting" of teaching staff in the course. Carol Christ's student consulting group (see Chapter 2) attests to these myriad results.

In a roundtable discussion chaired by Alexander Pines, co-recipient of the 1993-96 Presidents Chair at Berkeley, participants deliberated over the problems inherent in supervising large groups of GSIs in large enrollment courses. Participants discussed their own experiences with group supervision, common problems they had encountered, and strategies they had successfully implemented on one or more occasions. The group worked with the goal of generating a rudimentary set of guidelines that may be of use to others teaching large enrollment courses.

Pines, who as course instructor for the large Chemistry 1A course is responsible for attending to the instruction of up to 50 GSIs at a time, opened the session by sharing his bias that "the faculty member's own enthusiasm for teaching and ability to make course material relevant and inclusive of contemporary problems" has a particularly powerful impact on the quality of teaching by GSIs (a sentiment also voiced by the GSIs who were surveyed; see Appendix F). He explained how he saw large courses as joint undertakings by professor and GSIs, and provided some examples of the teaching philosophy he shares with GSIs:

> To explain something well, you have to be organized, and this means a lot of preparatory work outside of class. I tell GSIs to focus on fundamentals; most scientific revolutions have been sparked by the simplest questions, which students themselves are likely to ask.

Pines then opened the discussion by taking the position that the best way to insure continuity across multiple sections is for faculty members to provide a framework for each week's sections. Among the activities he suggested were providing GSIs with a common, relevant problem; distributing discussion outline sheets to GSIs; and even doing some parallel teaching. GSIs then work from this common agenda to structure the flow of the section. Pines provided some examples to illustrate how he and colleague Angelica Stacy of Chemistry used this strategy in their current 1A course.

Leon Litwack (History) described one way in which he has structured his courses so that faculty and GSIs are more truly collaborators in the teaching planning process. Litwack regularly selects at random one discussion section of his large lecture course and takes on the role of discussion leader for that section himself. He explained how this heightens his sensitivity to the teaching decisions facing GSIs, especially the decision about what material to cover and how to teach it. Litwack's strategy lessens the power differential inherent in the mentor-apprentice relationship, since the professor's role becomes less supervisory (i.e. "What will you do?") and more collegial (i.e. "What will we do in sections this week")?

Litwack's strategy sparked some spirited discussion. Some of the faculty participants wondered whether issues of favoritism came up, with students feeling envious of their colleagues who participated in the section led by the professor. Other faculty joked that it would be just as likely that undergraduates would see things the other way around, and would be delighted that they did not get "stuck" in the professor's section. Some participants thought that periodic "guest" spots in different sections of the same course might work as an alternative to leading a given section regularly, but others suspected that GSIs might see such visits as interfering with their authority as teachers. Concerns were also raised about the time and degree of coordination that would be involved were faculty members to visit each of twenty or thirty sections even once per semester. Although no consensus was reached about whether and how faculty should actively participate in some of the lab/discussion sections of their course, Litwack's idea prompted some innovative thinking about how faculty might take a more proactive role in collaborating with GSIs and integrating lecture and lab/discussion course components.

Participants were generally in agreement that weekly meetings were essential to course coherence, providing various suggestions concerning appropriate content and purpose for such meetings. Some saw their primary role as guiding GSIs, teaching only a few basics about ethics (respect for students, avoidance of satire, carefully monitoring use of humor). Others felt GSIs should be more actively involved in determining the course curriculum itself (e.g., helping to select a reading list).

Pines returned to the issue of providing a formal structure, asking participants whether they thought instructors should provide GSIs with a general topic and allow flexibility as to how it is covered, or provide a specific outline, suggesting questions and ideas. Again, opinions varied. One solution involved structuring half of each session while leaving the other half open, based on class need. Most participants agreed that in large courses with multiple sections, fairness dictated GSIs having the same section objectives. Faculty also felt that, to the extent possible, GSIs should

try to use similar means for conveying essential material with experimenting reserved for supplementary, non-essential content.

Pines said GSIs in his course are allowed to bring in their expertise in a limited fashion -- usually, for about 10 minutes per meeting. Several faculty raised issues and problems they had encountered when GSIs had "agendas" for their sections that differed from those recommended by faculty. Pines took a firm stance on this issue. He pointed out that GSIs who failed to follow established agendas and who showed cavalier behavior in the conduct of their sections were likely to influence differentially the students enrolled in those sections. Faculty agreed that this is a major problem when it occurs, and discussed several means for addressing the problem, including dismissing the GSI. Nearly all in attendance felt GSI free-lancing should not be a guiding principle for sections, while acknowledging how a professor's lack of objectives, forethought, planning and communication might inadvertently create such occurrences (as in the Case of Professor Goodman; see Chapter 3).

Communication was stressed, with once-per-week staff meetings seen as the primary base for well-run courses and bi-directional communication. George Chang was among those who found it helpful to invite GSI feedback at staff meetings. Chang, Pines and others were generally in agreement that GSIs who did not attend lectures had no way to pick up the professor's "tune."

The issue of lecture attendance led into concerns about GSI workload. Faculty discussed the variety of different roles GSIs fulfilled, including both in-class (see Chapter 5) and out of class activities (e.g. setting up labs, taking students on field trips). Faculty noted that when GSIs are supervised and given more detailed lesson plans for sections, not as much preparation time is needed. However, when they are not given this structure, more time is needed.

Participants also discussed problems that can occur when there are widely disparate levels of knowledge among GSIs -- especially senior and junior GSIs, or GSIs with specialties in the course topic vs non-specialists -- and related difficulties presented by GSIs unfamiliar with course content areas. One solution proposed by several participants involved having GSIs pair up with other GSIs to learn what they didn't know. Faculty also pointed out that senior GSIs can help junior GSIs plan and prepare, and Mintz made the point that classroom observations, too wieldy for instructors with more than five GSIs, can be a development resource for GSIs in a buddy system. Another potential strategy identified by faculty involved the use of advanced undergraduates as teacher's aides in large course sections, with the best students helping to mentor those newer to the subject matter. While sparking considerable interest, this last topic also raised some ethical concerns about peer teaching, competence and favoritism.

A final, mildly controversial issue raised during the roundtable concerned course assignments for newer GSIs. During the seminar's plenary session, Student Life Committee co-chair Christina Maslach had questioned whether introductory, overview courses are appropriate assignments for first-time GSIs. Although "introductory" courses mean different things in different disciplines, most require a broad knowledge of the field. Maslach had contended that it made no sense to

assign teachers to such courses until they can see the whole field. Litwack noted that this was the case in History, where new GSIs don't get assigned introductory courses. Pines, however, disagreed. He maintained that anyone in graduate school should be sufficiently adept at teaching fundamentals and that in Chemistry, graduate students are best prepared to teach introductory courses before they specialize.

Based on the roundtable discussion, seminar faculty generated several recommendations intended to help faculty teaching with large numbers of GSIs. These recommendations follow:

1. Regular, weekly meetings with all teaching staff are essential.
2. At these meetings, GSIs must be given some structure as to the week's section objectives and common content that they are to present.
3. Lecture attendance by GSIs is essential.
4. Pairing less experienced teachers with seasoned GSIs, for mutual observation and edification, is highly recommended.
5. Faculty should deal in a firm and forthright manner with GSIs who deviate too far from commonly agreed upon section agendas.
6. To the extent possible, GSIs should be encouraged to participate in course planning activities.

Chapter 6
Perspectives of Past and Current GSIs at Berkeley

Programs created in support of specific groups are most likely to succeed when members of the target groups are consulted in the early planning stages of the new project. The Advisory Committee for GSI Affairs' consultation throughout the planning process helped to tailor the seminar's agenda to the needs of faculty members. However, to advise faculty best on how to meet the needs of GSIs with whom they worked, it was equally important to know the perceived needs of GSIs themselves. Direct consultation with GSIs played an important role in shaping the seminar's direction and focus; a summary of GSI feedback, shared with faculty during a session on Day 4, appears in Appendix F.

A second, particularly invaluable source of feedback for faculty is available from colleagues who themselves were recently GSIs. Such individuals are in a position to provide unique perspective on the transition to the professoriate. Specifically, they can articulate ways in which teaching experiences in their former departments prepared (or failed to prepare) them for their subsequent careers and how faculty might do a better job of assisting GSIs in their preparation for future teaching roles.

Toward this end, two former Berkeley PhDs, now new faculty themselves, were invited to address the seminar gathering and participate in a discussion on the seminar's final day. Richard Myers, Class of 1982, now an associate professor in the Department of Physiology at the University of California at San Francisco, and Ellen Robey, Class of 1986, now an assistant professor in Microbiology at the University of California at Berkeley, shared their perspectives on ways in which their graduate training did, and did not, prepare them for the teaching side of their subsequent roles as professors. Each also offered recommendations for their faculty colleagues who work with GSIs.

Myers addressed the group first, recalling that faculty in his department had implicitly conveyed a message that graduate students should not take their teaching responsibilities too seriously, since they were supposed to be in the lab. He recalled that most professors gave little thought to teaching GSIs how to teach, and felt this reinforced his own ignorance about teaching, as it had never occurred to him before coming to graduate school that he might one day need to know how to teach.

> It was a very painful process for me to learn to teach after leaving graduate school. It never dawned on me while I was <u>in</u> school that I was missing anything.

Myers said that presenting ideas in seminars, and papers at conferences, were helpful, but narrow experiences. Once he began teaching college students:

> I had no idea what I was doing. Lots of the material was new. And as if it wasn't hard enough learning the material, I also had to figure out which material was most important,

how to present it, and how to deal with diverse groups of students. I learned, the hard way, what did and didn't work in trying to get them to understand something.

I don't think anybody ever told me I needed to learn how to do certain things to become a good teacher. But where I am now, teaching is taken really seriously. I'm trying to help my students see how important it is, now.

Ellen Robey then offered a few remarks, agreeing with much of what Myers had shared. She noted, as had Carol Christ on Day 1, that much of what she <u>had</u> done as a GSI was unrelated to what she was now doing as a faculty member.

What I was asked to do was very different from what the professor was doing. We mainly told students how to do their labs, and then went around for one-to-ones. I didn't need anybody to tell me how to explain; what I'd have wanted was the opportunity to do the lecturer's job, and maybe the other way around, too, so that professors could know what the GSIs were doing. I think GSIs would probably take this very seriously, and maybe even do practice lectures.

Similarly, discussion sections were to fill in the gaps. They weren't integrated with the professor's work. I think team-teaching with more experienced teachers who have taught before, getting tips, really helps new teachers.

The students who are now my GSIs have told me that no one tells them what to do. GSIs <u>want</u> more contact and direction from their instructors. Though I believe some trial and error is necessary in learning to teach, some direction -- especially at the start of teaching careers -- is really needed from professors.

Discussion following Robey's and Myers' remarks focused on faculty members' role in preparing graduate students to be good teachers; not only how to, but whether to. Many faculty took the position that teaching may not be for all graduate students, with some suggesting further that undergraduates have a right to be protected from GSIs experiencing problems with their teaching. Others pointed out that many teachers who struggle initially subsequently become quite competent. All, however, concurred that graduate students who show neither promise nor desire to teach have no place in the classroom. Excerpts from the discussion follow:

Reimer: Do you remember anything about the courses you taught as graduate students that wound up being useful later?

Robey: Drawing on the course outline, and the some of the ways material had been presented, was helpful.

Myers: Designing lab exercises was fun, though discussions for the lecture course were dry. I led a discussion full of students saying "I don't understand." I can't recall anything really memorable about them.

Feldman: What do you do when graduate students don't want to teach?

Robey: I think this starts with faculty. Faculty who don't value teaching teach students "we're supposed to be doing research." Students learn that research is what faculty value, and that teaching is a lot of work, is time-consuming, and takes away from other important work.

Roberts: So how do you encourage us, faculty?

Robey: I think you either come up with a system where teaching is valued and rewarded, or you get somebody else to do the teaching.

Shugart: Or, you let them (GSIs) know your expectations that they'll do a good job.

Myers: Yes; when I taught as a graduate student, faculty didn't meet with GSIs at all to communicate this. I had so little contact with faculty. I'm sure we'd have taken it seriously if the professor had said it was important.

Robey: I still think the message comes across from professors in the department, because they want students in the lab for research.

Litwack: We say GSIs have to teach -- but what responsibility do we have to protect students from poor teachers? I think we have an obligation to protect students from those who don't want to teach. I'd be troubled by a department that demands a certain amount of teaching, if graduate students don't want to teach.

Myers: I think this goes for faculty, as well. I ran into this, too. For some TAs, teaching was a horrible experience. Sometimes, the professor tried to make it up to undergraduates by having extra sections for them or bringing in another TA after realizing sections were going badly. I do think that if somebody's going to get a PhD -- in any field -- they should have some experience as a teacher. There should be some way to assess teaching ability before they're thrust into a class. Maybe make them give one practice lesson. It's not that much work. If they're awful, make them spend time sitting in on a class to learn how to present material. Though this takes them away from other important things they have to do -- research, grant writing -- if they don't do it, when they get to teaching as faculty, the damage they'll do will be even worse.

Feldman: It's been my experience that there will always be one or two who aren't good and who don't care about it. For them, it's not a valuable experience.

Johnson: Some of them will never become good teachers. We really can't demand it. We find in Integrative Biology that there are never enough good people to choose from to get the very best teachers. The pool of TAs just isn't large enough. There are also some smart people who know the material but who just don't enjoy explaining it.

Reimer: Professors are supposed to write end-of-semester assessments of GSIs, which then go in permanent academic files. The problem is that faculty don't take these seriously.

Litwack: We do this too, so very poor GSIs aren't reappointed.

Granger: Do faculty go into GSIs' labs and observe? If they did, they could correct GSIs' problems. I think almost anybody can be <u>taught</u> to do a reasonable job. I once had an instructor who said teachers were born, not made. But I think instructors can go into labs, get their GSIs together, and tell them what the group should be working on -- motivation, questioning, whatever's relevant. Such pointers can help. Graduate students are usually here for years. They can be given lots of chances to improve.

Myers: I think they have to know it's an <u>expected</u> part of their education. Most don't. Nothing in the application process highlights teaching. This needs to be an ethic in the field. People <u>can</u> learn. I did -- painfully -- though I never expected to. It's helped to be around colleagues who take their teaching seriously. If you can instill this from Day 1, it'd make a difference.

Lightfoot: Some PhDs <u>won't</u> teach. Maybe we should have an academic track where there are criteria for teaching as part of the PhD, while those going into applied work, industry and business wouldn't have to teach.

Myers: But many of us don't know where we're going when we first get to graduate school. It'd be too risky to track somebody as a first-year graduate student.

Lightfoot: But perhaps this system would allow some people to track <u>out</u> of academe, especially when their teaching's really bad.

Myers: This would solve the problem (Litwack) raised. But it'd have to be a national agreement, that there would be some sense of training.

Chang: I have some thoughts about this idea that it's possible to make a good teacher. Nutrition classes have 5-6 TAs, the size of a good seminar. I've often worried early in the semester that someone was going to be a bad TA. But sitting down to talk about where the course is going, what's working and what's not, and what's bothering them really helps. The TAs also learn from one another. So no one ends up a lousy TA. Some are more at home, but nobody's really bad. Our admission process <u>doesn't</u> look at teaching, but the meetings are helpful to those who can't teach.

Granger: Even when PhDs aren't going into teaching, they still need some basics: knowing what material is important to communicate, knowing how to convince other's that what you're communicating is important, communicating lucidly. Nearly every PhD goes to meetings and symposia. Wherever you go you need to know how to present, motivate, communicate, argue. We could make the case that everybody should get some basic training in teaching, and convince our graduate student and faculty colleagues of this.

McHale: There are really two different parts to what we've been talking about: skill level, and motivation. We've been blending the two in our discussion so far.

Litwack: I agree. I'm not sure there's any way to get at the teachers who really don't want to be there. I don't know how much we can truly improve them. Although it's rare to find somebody who couldn't be good in the classroom, it does happen, and I don't think we should be experimenting with undergraduates.

Shugart: Physics TAs are rated by students at the end of each semester. Ratings of 5 (out of a scale of 7) are average. Anybody receiving a mean score between 4-5 gets talked to by me; this is usually just 2 TAs out of 100 during a semester. Those ranking below a 4 aren't rehired. This has happened just 3 times in 14 years.

Myers: So talking to them must work. That's all I'd be asking for.

Robey: You're getting the message across that it's important.

Litwack: Do students give just a straight grade, or answer several questions?

Shugart: It's a straight grade. What this means is that those who don't get good grades don't teach. And usually, they don't want to be there.

Litwack: And so you just give up on them at that point?

Shugart: Yes.

Robey: Do they get dismissed from the program?

Shugart: No, they just don't teach again.

Myers: The term professor really means to teach. Don't most PhDs go to universities?

Lightfoot: Many go to the private sector. I'm not sure why it makes sense to force such people to teach, to waste time on them.

Robey: I don't see the harm; though GSIs could do harm, the risk probably isn't very great.

Lightfoot: I would agree -- but only when you're talking about <u>a</u> teaching experience. When you move into talking about graded curricula, about teaching development, that's a different story. We may need to re-think the whole culture of teaching in departments. For example: does <u>every</u> TA in history teach an upper division seminar?

Litwack: No.

Myers: I think the scale <u>does</u> make a difference. When you're talking about teaching several courses that gradually become more independent, this is really different from the typical graduate experience of teaching just once, or twice.

Craik: From what we've been saying, do you think discussion sections are dispensable?

Myers. Sometimes. In cases where only half of all students come, where things are free-floating with no structure, such sections could almost be office hours. But teaching preparation is important. I've seen a case where a brilliant scholar wasn't hired because of an inability to communicate.

Mintz: When I first came to the GSI Center, I ran across an article describing PhDs in Silicon Valley who weren't advancing because they lacked communication skills. I believe that these skills are basic anywhere.

Reimer: I'd like to think like Ramsden for a minute. As a parent, I've watched how my children learn -- and this has helped me as a classroom teacher. For people to become good teachers, it's important to know how people learn. I think the bad teachers are those who can't, or don't want to, make this connection. And if they can't, or won't, will they ever be successful at any job?

Myers: There are some great scientists who are rotten teachers.

Reimer: But has there ever been an inarticulate history professor?

Litwack: There are some outstanding historians, who are inarticulate addressing a large group, but who are outstanding seminarians. You don't put this kind of person before a large group -- you match them to a seminar -- and hope they don't become president of an association. I think this distinction is important.

Shugart: These kinds of distinctions are important for students, too. I just finished reading Sheila Tobias' "They're Not Dumb, They're Different", and learned that non-science students, unlike those destined for the sciences, think in non-quantitative ways while learning science.

With this, the group discussion drew to a close. Closing commentary, provided by seminar coordinator James McHale, is presented in the following chapter.

Chapter 7
Emerging Themes Identified by Berkeley Faculty Who Teach with GSIs

Previous chapters have detailed the highlights of the various sessions that constituted the working portion of the faculty seminar. This chapter and the next describe the seminar's concluding summaries. After the "Faculty Reflections" discussion on Day 4 (see Chapter 6), James McHale underscored some of the main themes discussed at this first faculty seminar. Recall that the seminar's intent was to identify ways that instruction in large enrollment courses could be enhanced through the faculty-GSI teaching team. It had been reasoned that the best way to accomplish this goal was by bringing together faculty who had themselves confronted the dilemmas of the large enrollment course, and by drawing on extant literature relevant to the topic. The hope of seminar planners was that the meetings would promote a sense of community among those who taught large segments of the undergraduate population, while generating several useful options for enhancing the teaching quality and development of GSIs, and thereby, educational quality for undergraduates.

McHale noted that over the course of the seminar, faculty participants had addressed two central themes. The first, which in many ways constituted the essence of the seminar, dealt with the use of individual and group supervision in large courses to promote teacher development and self-reflection and evaluation among GSIs. The second, which had been sparked by commentary from Carol Christ and Christina Maslach at the seminar's plenary session, explored how departments might use GSI appointments to provide increasingly more advanced teaching experiences for GSIs, enabling them to begin as true assistants but then to graduate on to assignments more closely approximating independent course control.

In addition to these topics, McHale reminded participants of several other themes they had discussed. A central issue that had been raised during the meetings concerned the faculty-GSI working relationship. Over several sessions, faculty had exchanged views of optimal co-teaching relationships, and discussed how to deal with interpersonal problems arising in the context of these relationships. McHale noted similarities between what faculty had seen as helpful (regular contact with GSIs, serving as role models in teaching, providing clear direction and pedagogical objectives for sections) and what GSIs themselves say (see Appendix D).

Notwithstanding the similarities in perspective, there was one theme emphasized by GSIs which did not receive much attention from faculty during the seminar. It had to do with GSI's individuality, personal style, and desire to play an active role in curriculum development. In conferences prior to the seminar, GSIs had indicated that they coveted opportunities to provide input into the teaching process. Although they saw the virtue of calibrating instruction across multiple sections of a large course, GSIs also wanted to experiment, create, and try out their own styles.

McHale maintained that uniformity across sections and innovation in GSI teaching need not necessarily clash;

> During our roundtable discussion, people raised concerns about the problems that arise when GSIs have "free rein" in different sections of the same course. It is possible to encourage GSIs' originality and creativity in designing lesson plans and conveying information without allowing free rein in sections. With minimal structuring, circumstances can be arranged so that GSIs are able to experiment with a variety of different teaching strategies and to discover the styles that fit them best -- while at the same time working with clearly defined section objectives and goals.

He went on to suggest that providing graduate students with the freedom to experiment with different methods for promoting student learning had the potential to facilitate development in teaching. However, he also recalled a concern that had been expressed at the faculty roundtable -- that there is sometimes a thin line between experimenting GSIs and "runaway" GSIs, citing Benjamin Diaz, the overzealous GSI in "The Case of Joe Goodman" (see Chapter 3) as a case in point:

> The discussion of the Goodman case provided some insight into potential motives driving Ben's behavior. One notion raised during the discussion was that unclear expectations from Joe (Goodman) may have been partially responsible for what appeared to be cavalier behavior on Ben's part. Problems could have been averted had Joe clearly spelled out the duties, expectations, roles and responsibilities of both himself and his GSIs before the semester began.

McHale also stressed that unclear faculty expectations are not always the culprit, pointing out that expectations can be clear but GSIs sometimes rebel anyway. He described the reasons for GSI "rebellion" as many and complex, citing Nyquist et al.'s (1989) "A Developmental Perspective on the TA Role". Nyquist traces student teaching development and describes a point at which a "break" is made from teaching mentors, paralleling a break that senior graduate students make in distinguishing their research ideas from those of dissertation directors and research mentors. Toward the end of their graduate careers, many students begin to establish identities in terms of what is different between them and those who taught them. McHale noted that in developmental personality theory, the "breaking away" or individuating process is seen as a universal in development.

Recalling some of the commentary from the two previous sessions (Chapters 5 and 6), McHale acknowledged that some faculty-GSI differences are more serious than others. While the majority of GSIs who implement teaching approaches that are mildly dissonant from those advocated by course instructors may simply be consolidating their teaching identities, certain GSIs may be doing so for more complex reasons. GSIs with difficult personalities do exist, as do professors with difficult personalities. McHale suggested that there is no reason to believe that the distribution of personality among academics varies dramatically from the diversity that exists in the general population. This being said, however:

Reframing "spunky" behavior by GSIs as a developmental stage -- one signalling entrance into a stage of more fully developed confidence as a teacher -- can de-pathologize the breaking away process.

McHale also called attention to Nyquist et al.'s treatment of an issue raised during the faculty roundtable -- whether new GSIs may be in a better position to teach overview subjects than more experienced GSIs who have become specialized in a certain aspect of their discipline. Alex Pines had used the (sports) metaphor "jocks" when describing the pull many graduate students feel towards becoming narrow specialists in one goal-oriented area, describing those who became "laser-jocks," "RNA jocks," and so on. McHale pointed out that Nyquist's research indicates that graduate students do in fact progress from a stage she calls "advanced learner" (upon first arrival in a graduate program) to one of "colleague in training," during which time they become more immersed in the language of the discipline.

Although this might be taken as evidence that new GSIs, rather than seasoned ones, may be the best equipped to teach in large overview courses, Nyquist describes a final stage in which graduate students re-emerge from the "jock" phase to see how their specialty links up with the field as a whole. It is at this point, perhaps, that GSIs may be most ready to bring broad perspective on their field, as well as new wisdom about learning, to their roles as teachers. Understanding the developmental stages characteristic of graduate student development thus may also be helpful to those designing graduated teaching experiences for GSIs.

An implicit theme underpinning seminar discussions of teaching development and cohesion among teaching staff had to do with participants' own theories about teaching and learning. McHale reminded participants of a common lament heard throughout the seminar -- that students seldom take responsibility for critically thinking about and evaluating course material themselves, preferring instead to simply "parrot back" what they've been told by instructors. As such, it is interesting that Paul Ramsden, author of the text used in the faculty seminar, sees discrepancies between this faculty desire and student realities as having a great deal to do with faculty views of teaching.

In exploring this issue, seminar participants completed Cross & Angelo's (1992) "Teaching Goals Inventory." Consonant with the findings of others, seminar faculty in math and sciences tended to describe their primary roles in terms of teaching basic concepts and principles, and were most likely to emphasize the importance of student responsibility for mastering material and availing themselves of opportunities made available to them. Conversely, social scientists were more likely to say that their goal was to provide learning opportunities for students to engage actively with material, in the service of promoting higher order learning. According to McHale:

This distinction -- concept mastery vs critical engagement of material -- is probably intimately connected with the subject matter taught in the different courses, and may help

to explain why it is that science and math courses get lower student satisfaction ratings than do courses in the social sciences and humanities.

Still, Ramsden believes that it is possible for teachers in any discipline to enhance the relevance and efficacy of their teaching. He believes that one key is simply diagnosing, at regular intervals, problems students may be having in learning, and distinguishes such learning checks (whose goals are to uncover lacunae between what instructors are presenting and what students are learning) from testing.

At the same time as he offers this and other methods for enhancing student learning, Ramsden acknowledges that there <u>are</u> no techniques to <u>insure</u> that students will learn, rendering everything teachers try a risk. What he doesn't add is that students <u>themselves</u> sometimes rebel against being asked to learn actively. Most students have learned, over many years, that the majority of teachers do not value their contributions: instructors teach, while students listen. Though many faculty and GSIs today believe that teaching and learning take place when students are involved, few can undo the ingrained patterns of passivity. Moreover, since nontraditional teaching approaches run the risk of upsetting and even alienating students, backfiring, or simply not working, many faculty and GSIs -- even those who believe that teaching and learning is a collaborative enterprise -- simply acquiesce, lecturing while students listen.

This being duly noted, seminar faculty were encouraged to accept Ramsden's challenge and to examine and experiment with different ideas about teaching and learning. In support of this request, faculty learned in the seminar's final session that less than favorable student responses to ambitious teaching efforts are contextualized and not necessarily regarded negatively during tenure reviews (discussed more fully in Chapter 8). The working segment of the seminar thus drew to a close with an exhortation to faculty to examine the foundations of their own teaching and courses so as to bring new insights of their own into work with GSIs. Attention was then re-focused on the larger institutional context, and faculty discussed teaching at Berkeley with Budget Committee Chair Nicholas Jewell and GSI Teaching and Resource Center head Jacqueline Mintz. This closing session is detailed in Chapter 8.

Chapter 8
The Way Things Are, and a Look to the Future

Professors lives are busy ones. Competing demands at the University regularly necessitate sacrifices and pull faculty in many different directions, almost inevitably away from the endeavors they cherish the most. Though many faculty are genuinely concerned with teaching and most are committed to doing a good job, only a very small percentage take time outside of regular classroom hours to examine the impact of their teaching, while fewer still participate in efforts to enhance instruction outside the traditional boundaries of their own classrooms. Nevertheless, a significant number of faculty lament the current state of affairs and would welcome a change in circumstances (e.g., Tomkins, 1992).

The change desired is not a de-emphasis on research, or an increase in the amount of time spent on teaching, but rather greater flexibility and support for time spent enhancing both endeavors. Recognition that faculty may stress one endeavor over another at different points in professorial careers has also been called for (Pister, 1991). Curiously, there is something of a paradox in how institutions traditionally support teaching -- by offering faculty development workshops, and by giving awards for excellence in teaching. While useful, workshops necessitate that faculty take additional time away from research. And ultimately, because promotions and tenure at Research I Universities are threatened without world-class research, faculty who already spend countless hours teaching and mentoring both inside and outside the classroom may feel more anger, threat, or coercion than support when aggressively recruited for workshops on teaching. Similarly, the practice of feting a few faculty for excellent teaching while ignoring the overwhelming majority of their equally hard-working colleagues runs the risk of demoralizing non-awardees and driving them away from their teaching or deeper into their research, for which they can attain more immediate and tangible reward.

Despite this paradox, the answer does not lie in abolishing workshops or awards, any more than it does in thinking that their presence can significantly alter the prevalent ethos of a University. As things stand, University funding structures are rooted in governmental grants to researchers, and so prestige comes to people through research rather than teaching. Realistically, university-based movements toward greater and more varied support for teaching are unlikely ever to succeed without a strong faculty voice and a sympathetic administrative structure.

In this sense, the draw of the faculty seminar at Berkeley may have resided as much in its promise to re-examine and critically discuss teaching priorities at the University as in its more topical focus of improving teaching effectiveness by enhancing work with GSIs. Faculty brought their concerns to Provost Carol Christ at the plenary session and, with the working segment of the seminar behind them, re-examined priorities with Budget Committee Chair, Nicholas Jewell and GSI Teaching & Resource Center Head, Jacqueline Mintz at the seminar's closing session. This chapter summarizes the final session, with excerpts from Mintz' and Jewell's commentary.

Like Provost Christ, Jewell spoke candidly, describing his perspective on how the Budget Committee viewed and evaluated teaching. He set as his task the debunking of several myths, telling the gathering that teaching is highly valued by the committee; on the other hand, his experience with personnel cases had taught him that teaching, service and research are not all equal in that they are valued with differing priorities at various stages of a career. He added that:

> Attempting to equate them is a fruitless exercise. Teaching, service and research are performed in different settings, and each is valuable. We are a great international research university and make our name on excellence in scholarship. This isn't going to change. But we also recognize that one's teaching career differs from one's research career, and we have different perspectives on the two roles. For example, the GSI Center and Office of Educational Development serve as resources for improving teaching. We don't see resources like these for research or for service; e.g., there's nowhere you can go for help in becoming a good department chair. We also believe faculty can "catch up" on their teaching effectiveness, with help from colleagues and students. This isn't necessarily so for research.

He noted that, while no one gets tenure at Berkeley without adequate teaching, it would never be said that one can't get tenure at Berkeley without adequate research. There, the adjective changes dramatically. Jewell argued that these views of what is valued and worthy of reward are not confined to the Berkeley campus:

> Academic careers are usually built on research. A good historian, unable to put two words together, can still become president of the American Historical Association. We also never see news media reporting front-line advances in teaching; we don't even talk about that...it isn't even near the center of the hub. Still, it plays a special role; it just doesn't make sense to view it as an analogue for research.

Since he had been a member of the Budget Committee for only three years, Jewell felt unable to detect any real trends in views about teaching. He did, however, reiterate that many faculty advancements are denied because of inadequate teaching performance. Jewell also thought it interesting that sometimes considerable discussion follows when a great teacher is denied advancement because of inadequate research, whereas it is rarely publicized when star researchers don't get advanced because of their teaching.

> We just don't evaluate teaching in the same way as we do research. Research is evaluated everywhere in our society, and we ask for extensive proof of quality from external reviews and the like in making tenure decisions. Although this hasn't been so for teaching, there's been some change. Two kinds of evaluation are now required for teaching; student evaluations are no longer sufficient. This means we're having to be more creative in seeking evidence of good teaching. The use of peer critiques of teaching performance is more complex than procedures in place for peer evaluations of research.

Jewell closed by suggesting that seminar participants could play an important role in their work with GSIs by giving these graduate students an early start in their careers by evaluating their teaching carefully.

Following Jewell's comments, participants engaged in lively discussion about the Budget Committee's and Provost's views of teaching. Responding to a query from Kent Lightfoot, Jewell noted both differences and similarities in the views of the Provost and Budget Committee concerning teaching, tenure and promotion.

He noted, for example, that many major conflicts had arisen with departments and chairs when recommendations were made to slow down or deny advancement of the department's strongest researchers because of teaching.

Ned Johnson sought Jewell's opinion on teaching and step structures for faculty at different stages in their careers, also a topic of central importance during the plenary session. According to Jewell:

> The Budget Committee has tried to be more flexible in looking at people's careers. For example, two years ago we instituted a one-time step advancement for extraordinary undergraduate teaching, as an analogue to a similar one-time step advancement in service. So far, it hasn't been used very frequently. Maybe extraordinary teachers are also good researchers and are getting promoted through normal channels.

Kenneth Craik recommended that faculty mentorship of GSIs be considered an additional index of effective teaching for purposes of tenure review. In support of Craik's proposal, Jewell suggested that evaluations from GSIs could be submitted as evidence of quality mentorship, and that departments could think about making such evaluations more systematic than they do now. He also felt that evidence of mentorship of GSIs could be included in teaching portfolios provided by departments. He felt that the overviews provided by departments establish a context that helps both the committee and tenure candidates.

George Chang mused that if the University really wanted professors to become better teachers, they'd give students vouchers either to turn in to or withhold from faculty at the end of the semester as payment for the course. He noted that this is essentially how research works. Another way of gathering systematic, uniform information, according to Chang, would be for students to dial in their course evaluations via Tele-Bears (the Berkeley student registration system). Howard Shugart noted that in Europe in centuries past, instructors were paid directly by students. Drawbacks of these ideas were also noted; Jewell thought these plans might be particularly troublesome for professors assigned to unpopular courses; Orman Granger imagined that differences in evaluations might be seen depending upon when they were collected -- before, or after, final exams.

Kal Sastry proposed several ideas for promoting teaching quality, including more substantive teaching portfolios. Jacqueline Mintz asked Jewell whether he had seen any evidence of

departments using portfolios or collegial teaching networks to promote teaching and sense of community. Jewell indicated that he was not expert in evaluating the possible range of departments' materials, but had seen several different ideas. He added that a bonus of faculty becoming more literate in evaluating their own teaching was that they'd then be in a better position to assist and evaluate GSIs.

Advisory Committee member Patricia Cross (Education) wondered whether it might be advisable to think about evaluating teaching as Stanford was now evaluating research -- by looking at the best three things faculty had done. Fellow committee member Sastry felt that a consideration raised by Jewell earlier -- required vs popular courses -- created problems in Cross' scenario. Jewell was quick to note, however, that the Budget Committee tended to look kindly upon faculty willing to assume responsibility for teaching large, required undergraduate core courses.

The discussion then turned to undergraduate satisfaction. Advisory Committee Chair Jeffrey Reimer wondered why so few courses had a 100% response rate for faculty evaluations, expressing his concern that undergraduates did not see their feedback as important to teachers. Jewell felt that students had no idea how important their views were in faculty advancements, or in helping faculty to target areas for teaching improvement.

Johnson asked how the Budget Committee interpreted satisfaction ratings, worrying that entertaining teachers might be rated more highly than demanding ones. Jewell acknowledged this issue:

> You know when somebody's research ideas don't pan out -- there may be lots of papers, but ultimately there's no payoff. Since there's no real way to gauge the ultimate payoff of teaching from student ratings, it's really important for chairs to provide some context to help us evaluate the meaning of good ratings.
>
> You'd be surprised how much time we put into looking at original student ratings. Some negative comments like "too much reading" or "too demanding" are almost pluses, suggesting teachers who try to challenge students. Others, like "intimidating" are not usually positive signs. We try to be conscious of the tone of evaluations.

Chang admitted that he was puzzled by the slow progress made in enhancing the support and value of teaching at Berkeley. He noted that small colleges have learned that alumni money is more likely to be forthcoming from those whose teachers provided positive undergraduate experiences.

> Faculty at small universities get the message. I'm asking -- how? How do they do it, and how can we do it?

Chang's question lingered. No answers were forthcoming, though Mintz added further food for thought when she noted that at many small universities where teaching excellence is required, research plays just as great a role in tenure decisions as it does at Berkeley.

The discussion wound to a close with round criticism for the diminishing support and resources devoted to the physical classrooms themselves. Though the discussion focused on material resources, Jewell reminded faculty that they were the primary resources for GSIs and urged their support. With this, seminar coordinator James McHale asked Mintz, as head of the GSI Teaching and Resource Center, to offer her final thoughts about work with GSIs.

Mintz expressed concern about several predominant and antagonistic views and stereotypes about teaching that had been raised at various points during the seminar. She listed some of these views:

> •"Good teachers are born that way; the rest can't be taught, so why bother?"
> •"Anybody can teach, so it isn't important; research is where we distinguish ourselves."
> •"Funding and fame follow research, yet most of us are here because of one or two great teachers in our pasts."

Mintz stressed that a premise of teaching at Berkeley -- and of the GSI Teaching and Resource Center in particular -- is that everyone is capable of learning to teach. She said that the Center does not believe in teaching or learning "blocks."

> Unconsciously, I think most of us walk into classrooms thinking that we will one day be at a point where we're delivering a finished product -- viewing teaching as something that can truly be finished or perfected. For instance, Professor Myers spoke of difficulties in teaching as a problem that can be addressed. Several here commenting on the case study (Chapter 3) said that once the GSI (Ben) is "corrected" or "fixed," things will be made right. Few consider the matter an issue of ongoing development (see Chapter 7).
>
> When we were discussing evaluation a short while ago -- especially why it is that students don't find it important to provide end-of-semester feedback -- it made me think of our classrooms. Not just classes at the University, but in elementary and secondary schools, as well. There, teachers rarely ask students for feedback, even so much as to let them say "I liked that project." There is no precedent for students to provide feedback on teaching and learning before they reach higher education. Lack of feedback was also a significant theme in the case study; it never occurred to Goodman to ask his GSIs what they might already know or who might be most qualified, or even to examine himself. Although the potential for future problems in Goodman's course might diminish if he gave GSIs a questionnaire that asked them to describe prior teaching experience or knowledge of curriculum design, few tackle the problem at this level. Most focus instead on Ben and his problems. Yet Ben is a product of our educational system. He knows how to rise among his peers. Goodman admired him for the very qualities that -- unexamined -- led to excesses.

The GSI Teaching and Resource Center developed this seminar for faculty because we recognize that you are the ones on the front line. Many departments hire people to train GSIs, but ultimately it is the activities of faculty mentors that register with graduate students and stay for years to come. This is why it's <u>so</u> important for faculty to involve GSIs actively in a self-conscious teaching process. They are modeling themselves after you, whether they know it or not.

In closing, Mintz and GSI Advisory Committee Chair Jeffrey Reimer hailed the contributions of seminar participants and encouraged them to bring relevant content from the seminar to colleagues at faculty meetings, and to discussions with departmental Faculty Advisors for GSI Affairs. They also promised to continue to press for new avenues to support teaching at Berkeley and exhorted the contributors to this seminar to do the same. The seminar closed appropriately with (What else?) an evaluation, and a follow-up evaluation later in the spring semester.

APPENDIX A: THE CASE OF PROFESSOR JOE GOODMAN

(Working Draft)

Beall University is a public, research (Carnegie I) university with a student population of 35,000, among whom approximately two-thirds are undergraduates. World-famous for the research conducted there, Beall has a reputation as a place where faculty have the autonomy to do whatever they wish.

Economic hard times, along with public concerns about the effective use of time and resources at the university, have brought new attention to many areas, including undergraduate education. Faculty are asked to account for how they spend their time. Comparing Beall to other public institutions, some argue that faculty should teach more. Budget constraints, challenges to the curriculum, demographic changes and research about teaching and multiculturalism have occasioned numerous committee meetings dedicated to responding to the changing needs on campus. These additional meetings further detract from faculty's attention to their own work. Confronted with multiple and competing demands, and the need to explain how they use their time, many Beall faculty feel pushed and pulled in every direction.

Joe Goodman, a full professor of Economics with a reputation as a thorough lecturer, teaches a large, introductory, lower division course. Having taught the course over many years, Joe is an expert in the subject matter who sees his responsibility in the course to be organizing and delivering a large body of information in an interesting and clear manner. He is happy to have shaped each lecture such that the material begins and builds, like a play, reaching a peak around three quarters of the way through, climaxing in his deftly tying all the points together. He always manages to restate the most important issues at the end, finishing a minute or two before the hour to prevent being drowned out by the closing of notebooks and gathering of backpacks. The semester itself, repeats the pattern on a larger scale. A theater buff himself, Joe enjoys performing in front of the class of approximately 200 students two times a week. After so many years, he has even lost the tingle of stage fright which accompanied each change as it found its way into his beginning Economics' repertoire.

This semester Joe is particularly pleased to have as his head teaching assistant his star protege, Benjamin Diaz. Soon to be on the job market, Ben had come to Beall from Endall University, the best private school in the country. Joe was delighted to get him as a graduate student. Since he arrived only two years before, Ben has been his student and research assistant, resulting in the publication of three joint articles. Now, realizing that Ben would have to fulfill his teaching obligations of one year in order to finish his degree, Joe has made sure they can continue their working relationship by asking Ben to teach in his course and to head the group of six new graduate teaching assistants. Though he had never before had a group of graduate students entirely new to teaching at Beall, he felt his prior knowledge of Ben's intelligence and mastery of the material was sufficient to recommend him as the peer role model for the others. Joe was

attracted to Ben's self-assured, authoritative, almost aggressive, style in class, which caused other graduate students to think through their opinions before challenging his. Not only was Ben a bright young star in his field, he was always eager to take on more work and to help out. In fact, he offered to read an article for Joe on a holiday weekend away to enable Joe to meet his own publication deadline. Joe was pleased with his foresight in naming Ben for the position, and was sure the other new graduate teachers would find it as exhilarating to work with Ben as he had. Joe used the graduate students primarily to clarify the material delivered in lectures, as he did not allow time for questions and answers in his presentation.

The Friday before the beginning of classes Joe met with all the graduate students teaching with him. He told them generally what would be covered in the class, how many assignments there would be and that there would be a weekly meeting with himself to discuss problems which might arise in grading or course details. Tests would be divided up with each graduate student teacher reading approximately the same amount. Following each test, the graduate students would grade their sections on the exams, identifiable only by number, to rule out any chance of inequity or bias. Exams were generally definitions and short answers, mostly requiring memorization. Out of respect for their schedules and their level of academic sophistication, Joe told them they could read his text and handouts rather than attend lecture. Their primary duty in section would be to go over material covered in lecture, which they would have in their handouts, and to answer questions arising from the subject matter. Section attendance for the undergraduates would be optional. He reminded them to pick up the syllabus and handouts along with the class list before attending their first discussion sections the next week. He announced that Ben Diaz would have the role of head graduate student teacher to help with administration and the smooth flow of the course. He wished them all a successful semester.

It was a brisk and busy fall semester. Cold weather moved in early, stirring Joe's energy to delve into his current research project. One conference paper had been planned long before, but when a colleague phoned to ask if he could come deliver a paper on his latest work, Joe realized it was the perfect opportunity to get some reaction to the new hypothesis he had been struggling with on his own. Having begun the semester conscientiously, he knew the graduate students would understand his missing two consecutive meetings with them. He was scrupulous about missing only one undergraduate lecture, and scheduled an exam on his second day away. He reassured himself in leaving because Ben was in charge.

Ben had moved into his new responsibilities with gusto. In addition to photocopying the weekly handouts and putting them into the others' mailboxes, of his own initiative, he had created an agenda to better organize these business meetings. When he returned from delivering his second paper, Joe found in his box a "supplement" made for each of last two subject headings on the syllabus. Each had Benjamin's name as author. Clipped to them was a note in Ben's hand saying that he had created them and handed them out to the other graduate students while he was away. Though he would have wanted Benjamin to consult with him first, Joe squelched a feeling of discomfort reminding himself that he *had* missed two meetings and that Ben's obvious intention had been to help the other graduate students in his absence.

Attempting to get up to pace that first Monday back, Joe felt a cold coming on. It started as a normal winter cold but, because he was jetlagged he reasoned, it rather quickly evolved into a case of bronchitis. Though he struggled through the week's first lecture, he knew he was too sick to attend the graduate students' weekly meeting, and he wanted to be well enough for the second lecture.

The morning of the lecture, Joe received a call from one of his graduate student teachers, Anna Wong. She apologized for reaching him at home but said that, if he were well enough, she would like to meet with him following the lecture that afternoon. Joe made the appointment and, hanging up the receiver, recalled that he had picked up a message from another of the student teachers who wanted to meet with him. Joe had not yet had a chance to call her back. Having been away and then ill, he figured that both students had a few questions about the recent midterm they felt couldn't wait for the weekly meeting which was still two days off. In the first meetings he ran, the group had become pretty good about getting all the weekly business done within a half hour. He guessed that these two students probably wanted to save the others the nuisance of extending the meeting time to raise some simple question. He resolved to return Sarah Martin's phone call right after his appointment with Anna that afternoon.

At 3:45, Anna Wong was waiting outside his office. She came in and settled herself, seeming a bit more chatty, or perhaps nervous, than Joe had seen her in the weekly meetings. He had not had her as a student, but he had observed that she was a very serious about her work and seemed to show dedication and enthusiasm in teaching undergraduates. She rarely spoke in meetings but once or twice, she volunteered some interesting, small group exercises she had made up when teaching at another school. She described how they helped students having problems with the particular concepts that were coming up in lectures.

This afternoon, as Joe pulled up his chair, he turned to Anna and indicated his readiness to listen. She squirmed, fell silent, and then began groping for the right words.

"Professor Goodman, this is very hard for me. I thought a lot about not coming at all; I am in a very precarious position I realize. You and I hardly know each other, but I hope you will understand when I explain why I have come. I'm upset and concerned, and I decided that it was my responsibility to let you know why."

Joe had no idea about what Anna was leading up to but he instinctively moved forward in his chair and felt a slight quickening in his pulse.

"I don't mean to sound an alarm, Anna continued but .... I need to talk to you about....Ben Diaz."

"Has he been hurt, has something happened to him?" Joe raced in.

"No, not really," Anna responded; "it's about the class, that is the course and the graduate student meetings." Relieved, Joe sat back, released a deep breath, and listened.

"After you left, Ben took over, as I am sure you know. But he didn't just take over the administrative details: the things we were used to going over with you. I mean he really *took over*. He passed out a supplement to the syllabus which he told us we needed to cover in our sections. Here is the latest one he handed out at yesterday's meeting. We were surprised, because you hadn't mentioned the supplement before you left. We all assumed you knew about it and had approved it; it wasn't until the other day when Michael Johnson and Peter Maslin asked him, that we found out that he had taken it upon himself to write it. We didn't even know if you knew about it. I'm sure, Professor Goodman, that he meant well, but each week in our meetings, he asked us if there were questions on the supplemental materials he told us to teach. He said they were to explain and fill in rough spots or things not covered in the lectures and we were required to use them. I guess I felt a little uncomfortable right away because it meant I didn't have enough time to deal with the students' questions and because I needed to introduce more material in the section. I didn't have any freedom to organize the section in the way I had begun. I suppose it was easier on me than the others though, because I wasn't new to teaching. At first no one knew the whole story and, I guess, no one wanted to complain. Besides, he told us that he attended all the lectures, so it was easy for us to think that you wanted him to include the new material."

Goodman shifted in his chair. That feeling of discomfort, once squelched, took hold. He had browsed Ben's earlier supplements. They certainly didn't contain serious differences with his own hypotheses. Yet, he could see Anna's point. Glancing at the new supplement she handed to him, he realized that in his eagerness, Ben had focused on one particular way to present the material. Joe resolved to read all the supplements carefully, to speak to Ben, and to sort everything out by the next meeting. It wouldn't be easy. He didn't know how he would avoid embarrassing Ben and there were other problems involved. Nonetheless, this was his responsibility. He would have to find a way to deal with it. Just as he was about to reassure Anna, and tell her he would deal with it, she began again.

"Professor Goodman, there *is* one more thing. I really don't like talking about someone else like this but, I think that maybe you should know. Maybe you could help. When we started each section had approximately thirty students. Not everybody comes of course. But after the first few weeks I noticed several new faces coming in. I spoke to one of the other graduate students and she told me she had gotten more students in her section as well. I don't call roll because section attendance isn't required. But I always ask students their names when they ask questions so I can get to know them individually. Last week, in the teachers' meeting I was planning to ask about the growing numbers in the course just before midterms and to find out why I hadn't received a revised section list. But, I was sitting next to Ben in the meeting and I happened to see a copy of his section names. Every one of the new students in my section was on his original list."

Lots of questions rushed to Goodman's mind. Why had so many students left Ben's class? Had there been time conflicts in their schedules that hadn't been caught by the new computer

registration system? Did Ben divide up his section to take over this enlarged "administrative" role? These questions raced through his mind as Anna took a breath to go on. Then the phone rang.

"Hello, Joe Goodman speaking."

"Professor Goodman, I'm so glad you're in. This is Sarah Martin. I've been trying to reach you. There is a problem I need to talk to you about."

"I'd be happy to speak to you but I'm in a meeting just now."

"I'm sorry to interrupt but, are you with Anna Wong by any chance?"

"Yes, I am."

"Well, this problem concerns Anna as well. Perhaps she told you that both of our sections have grown from about thirty to forty students in the last three weeks."

"Yes, we were just discussing something about that."

"Well, Professor Goodman, please forgive me for intruding but did she tell you that these were Benjamin Diaz' students? And Professor, did she tell you that the new students are almost all women?"

Appendix B
Teaching Goals Inventory
adapted from K.P. Cross & T.A. Angelo, UC Berkeley School of Education, 1/90

PURPOSE

This is a survey of teaching goals. Its purpose is two-fold: (1) To help faculty members become more aware of what they want to accomplish; and, (2) to guide the development of techniques faculty can use to assess the achievement of their teaching goals.

I. TEACHING GOALS FOR A SPECIFIC COURSE

Please select **ONE** undergraduate course you are currently teaching. Respond to all the questions on the Inventory in relation to that specific course. Answer the questions in Section I by circling the <u>one</u> response most descriptive of the course you have selected.

A.   Please print the **title** of your course:

B.   Circle the appropriate number to indicate the **discipline** to which your course belongs:

    Architecture/City Planning 1
    Basic Skills/Study Skills/ESL..2
    Business/Management..3
    Communications/Media...4
    Computers/Information Science...5
    Criminal Justice/Protective Services..6
    Education 7
    Engineering/Engineering Technology..8
    English Language/Lit/Composition(not ESL)...9
    General Education/Interdisciplinary...10
    Human Services/Community Services...11
    Humanities (other than English)...12
    Law/Paralegal...13
    Life Sciences 14
    Mathematics...15
    Medical/Allied Health/Medical Tech..16
    Performing Arts..17
    Personal Development/Career Exploration...18
    Physical Sciences..19
    Physical Education/Recreation..20
    Social Sciences/Behavioral Sciences...21
    Trade/Vocational..22
    Visual Arts 23

TEACHING GOALS

Please rate the importance of each of the 52 goals listed below to the course you have selected. Assess each goal in terms of what you deliberately aim to have your students accomplish, rather than in terms of the goal's "general worthiness" or "overall importance to your institution's mission." There are no "right" or "wrong" answers. For each goal, circle <u>only one</u> response on the 1 to 5 rating scale.

In relation to your course, indicate whether each goal is:

(5) ESSENTIAL (E)	--	A goal you **nearly always** try to achieve;
(4) VERY IMPORTANT (VI)	--	A goal you **very often** try to achieve;
(3) IMPORTANT (I)	--	A goal you **often** try to achieve;
(2) UNIMPORTANT (U)	--	A goal you **rarely** try to achieve; or,
(1) NOT APPLICABLE (NA)	--	A goal you **never** try to achieve.

(You may find it helpful to quickly read through all 52 goals <u>before</u> rating their importance.)

Rate the importance of each goal below in terms of what you aim to have students accomplish in your course.

		E	VI	I	U	NA
1.	Develop ability to apply principles and generalizations to new problems and solutions.	5	4	3	2	1
2.	Improve mathematical skills	5	4	3	2	1
3.	Develop an informed concern about contemporary social issues	5	4	3	2	1
4.	Learn terms and facts of this subject	5	4	3	2	1
5.	Develop capacity to make wise decisions	5	4	3	2	1
6.	Develop analytic skills	5	4	3	2	1
7.	Improve ability to concentrate	5	4	3	2	1
8.	Develop capacity to make informed ethical choices	5	4	3	2	1

Rate the importance of each goal below in terms of what you aim to have students accomplish in your course.

		E VI I U NA
9.	Cultivate physical health and well-being	5 4 3 2 1
10.	Develop leadership skills	5 4 3 2 1
11.	Improve self-esteem/self-confidence	5 4 3 2 1
12.	Develop capacity to think for one's self	5 4 3 2 1
13.	Develop skill in using materials, tools and/or technology central to this subject	5 4 3 2 1
14.	Improve skill at paying attention	5 4 3 2 1
15.	Learn techniques and methods used to gain new knowledge in this subject	5 4 3 2 1
16.	Cultivate a sense of responsibility for one's own behavior	5 4 3 2 1
17.	Develop ability to perform skillfully	5 4 3 2 1
18.	Learn to appreciate important contributions to this subject	5 4 3 2 1
19.	Develop a lifelong love of learning	5 4 3 2 1
20.	Learn to understand perspectives and values of this subject	5 4 3 2 1
21.	Develop an informed appreciation of other cultures	5 4 3 2 1
22.	Learn concepts and theories in this subject	5 4 3 2 1
23.	Develop a commitment to personal achievement	5 4 3 2 1
24.	Develop ability to think creatively	5 4 3 2 1
25.	Improve writing skills	5 4 3 2 1
26.	Develop ability to think holistically; to see the whole as well as the parts	5 4 3 2 1
27.	Improve ability to work productively with others	5 4 3 2 1

Rate the importance of each goal below in terms of what you aim to have students accomplish in your course.

		E	VI	I	U	NA

28. Develop an informed understanding of the role of science and technology   5 4 3 2 1

29. Develop aesthetic appreciations   5 4 3 2 1

30. Improve ability to follow directions, instructions and plans   5 4 3 2 1

31. Develop management skills   5 4 3 2 1

32. Develop ability to synthesize and integrate information and ideas   5 4 3 2 1

33. Improve speaking skills   5 4 3 2 1

34. Develop ability to distinguish between facts and opinions   5 4 3 2 1

35. Improve ability to organize and use time effectively   5 4 3 2 1

36. Develop respect for others   5 4 3 2 1

37. Develop appropriate study skills, strategies, and habits   5 4 3 2 1

38. Improve reading skills   5 4 3 2 1

39. Develop a commitment to accurate work   5 4 3 2 1

40. Develop an informed historical perspective   5 4 3 2 1

41. Cultivate emotional health and well-being   5 4 3 2 1

42. Develop a commitment to one's own values   5 4 3 2 1

43. Develop an openness to new ideas   5 4 3 2 1

44. Learn to evaluate methods and materials in this subject   5 4 3 2 1

45. Develop problem-solving skills   5 4 3 2 1

46. Prepare for transfer or graduate study   5 4 3 2 1

47. Improve listening skills   5 4 3 2 1

Rate the importance of each goal below in terms of what you aim to have students accomplish in your course.

		E	VI	I	U	NA

48. Develop a commitment to exercise the rights and responsibilities of citizenship

        5 4 3 2 1

49. Improve memory skills

        5 4 3 2 1

50. Develop an appreciation of the liberal arts and sciences

        5 4 3 2 1

51. Cultivate an active commitment to honesty

        5 4 3 2 1

52. Develop ability to draw reasonable inferences from observations

        5 4 3 2 1

II. COURSE INFORMATION

*Please **circle the <u>one response</u>** that most clearly describes your course.*

53. The **primary purpose** of this course is to:

Fulfill general education/core requirements	1
Fulfill major/concentration requirements	2
Pursue personal interests	3
Strengthen job/career skills	4
Other (please specify)_____	5

54. The **level at which this course is taught** is primarily:

Freshman	1
Sophomore	2
Junior	3
Senior	4

55. The **number of students** in this class:
(if you teach more than one section, give the number in the largest section.)

100 to 200	1
201 to 400	2
401 to 600	3
601 to 800	4
801 or more	5

56. The **number of times you have taught this course:**

1 or 2	1
3 to 10	2
11 to 20	3
21 to 50	4
51 or more	5

57. Your **primary method of instruction in the large lecture hall:**

Lecture only	1
Lectures with regular question/answer periods	2
Lectures incorporating class discussion	3
Lectures with in-class, small-group exercises	4
Lectures incorporating discussion and group exercises	5
Other (please specify)	6

III. BACKGROUND INFORMATION

58. The **total number of years you have taught** at the undergraduate level, including this year: (include part-time and full-time teaching)

Less than 1	1
1 or 2	2
3 to 6	3
7 to 12	4
13 to 25	5
26 or more	6

59. Your **present academic rank:**

Professor	1
Associate Professor	2
Assistant Professor	3
Other (please specify)	4

_____

60. Your **age group:**

      25 and under.. 1
      26 to 35..2
      36 to 45..3
      46 to 55..4
      56 to 65..5
      66 and over..6

61. Your **gender:**

      Female..1
      Male 2

62. Your **race or ethnic group:**

      African-American, non-Hispanic..........................1
      White, non-Hispanic..2
      Hispanic, Latino or Chicano................................3
      Native American or Alaskan Native.....................4
      Asian-American or Pacific Islander......................5
      Other (please specify)_____...............................6

63. Your relative **interest in teaching and research:**

      Primarily interested in teaching...........................1
      Primarily interested in research...........................2
      Both, but more interested in teaching..................3
      Both, but more interested in research...................4

64. In general, how do you see your **primary role as teacher**?
    (Although more than one statement may apply, **please circle <u>only one.</u>**)

      Teaching students facts and principles of the subject matter 1
      Providing a role model for students..2
      Helping students develop higher-order thinking skills............................3
      Preparing students for jobs/careers...4
      Fostering student development and personal growth 5
      Helping students develop basic learning skills 6

65. Given your answer to #64 above, how would you characterize the **second most important role you play as teacher**?
(Although more than one statement may apply, **please circle <u>only one.</u>**)

Teaching students facts and principles of the subject matter 1
Providing a role model for students...2
Helping students develop higher-order thinking skills...........................3
Preparing students for jobs/careers...4
Fostering student development and personal growth..............................5
Helping students develop basic learning skills..6

66. Which of the following statements most closely resembles your own personal philosophy of teaching?

Teaching involves finding out about student's misunderstandings, intervening to change them, and creating a context of learning which encourages students to engage actively with the subject matter. An integral part of this endeavor involves listening to students and altering instruction based on their needs.   1

Teaching involves transmitting a known body of knowledge, including the presentation of content and the demonstration of procedures. It is the responsibility of students to avail themselves of the information and opportunities made available to them.   2

Teaching is best conceived as a supervision process. It involves the articulation of techniques designed to insure that students learn. This includes providing diverse learning activities that actively involve students with the material.   3

67. Do you have any comments on the Teaching Goals Inventory?

Thank you for participating in this survey.

Appendix C

Observing GSIs

Faculty observation of graduate student instructors (GSIs) is a topic that stirs strong sentiments in both parties. Many faculty members express concerns about the time this activity requires, and often feel reluctant to undermine the GSI's teaching efforts by invading his or her classroom -- sometimes believing they have nothing of value to contribute anyway. Graduate students usually feel vulnerable, fear having their efforts criticized, and worry about losing credibility with their students, with the faculty member in charge of the course, and ultimately with others in the department whose favorable opinion they value and need. Given these strong negative feelings, it is quite remarkable that so many GSIs who have been observed by a faculty member rate the experience as a major factor in their development and improvement as a teacher. These subjective reports are borne out by several studies demonstrating the efficacy of observation in promoting teaching development and openness in teaching. When faculty do visit GSIs' classrooms, in almost every case the critical variable that determines the success of the observation is how the experience is framed and conducted by the observer. This is an attempt to summarize how faculty members can use classroom observations to enhance the teaching of GSIs in their courses, in a manner that is both time-efficient and non-threatening for all involved.

Framing the experience

If you plan to use classroom observations in your course, it is important that you provide the experience for everyone teaching with you. Observations of some, but not all of your GSIs cause them to worry that they are being singled out for doing a poor job. Let GSIs know before the semester begins that each of them will be visited (by you, or by a fellow GSI; see below) at some point in the semester. Giving GSIs regular opportunities to provide you with feedback on your own lectures will help to foster a spirit of collegiality and collaboration rather than defensiveness. Let GSIs know at least a week ahead when they will be observed in their sections, what they should do to prepare, how you (or the peer visitor) will behave when visiting, and what will happen afterwards.

In larger courses with more than 5 GSIs, the amount of faculty time involved in visiting each one's section may be prohibitive. In such courses, peer observations (GSIs visiting one another) can be used to provide some individualized feedback for each GSI. To insure their productive use, peer observations should be conducted just as a faculty observation would be (see below). This form, together with checklists available from the GSI Teaching and Resource Center, can be used to help guide both faculty and peer observations.

When to observe

Decisions about dates for classroom visits should be made jointly by professor and GSIs as early in the semester as possible, to avoid scheduling conflicts later. Two visits per GSI -- one early and one late in the semester -- are crucial, so that development can be tracked (If two visits cannot be arranged, one observation is still valuable. A second one can be done by a GSI, but with different objectives than if it were a visitation). Students should be told at the beginning of the semester, by both the faculty member and GSIs, that they may be visited in their labs/sections by the instructor or by another GSI from time to time. If video cameras will be present in classrooms at any point, students should also be prepared for this and assured that the camera will not be trained on them or used to evaluate them in any way. Downplaying the significance of a visitor's presence in sections will allay some, though certainly not all, student anxiety. Undergraduates often react favorably when they learn that their instructors are taking their teaching seriously by monitoring and assessing their own work.

Preparing for the visit

Early in the semester, discuss with all the GSIs together the goals of the classroom visit. Many faculty members demystify the process by creating, together with GSIs, a checklist of the most important skills needed for effectively teaching labs or discussions (brainstorming with GSIs can be very productive, though faculty may lead in generating the list). If the group decides together to use a jointly-created checklist for later classroom visits, the list can be reviewed by observer and teacher before each visit. However, it is important that the group come to a consensus on how the checklist should be "used" (i.e. simply as a reminder of the important teaching categories, or as an actual rating sheet). Actual "ratings" should be rendered only when agreed upon by the entire group. An alternative to ratings is to have GSIs use the checklist to identify 2-3 main teaching areas (e.g. board use, questioning, summaries and transitions), in which they would like attention or help.

If peer observations will be used, each GSI in the course should pair off with a fellow instructor. Newer GSIs should try to pair with someone more advanced, and should play the role of observer before being visited themselves. A day in advance of the observation, the teacher should give the observer a list of his or her objectives for the section. New GSIs find it helpful to hear a few examples of reasonable objectives for a section (i.e., to review supply and demand graphs; to see how well students understand the concept of momentum transfer by jointly working exercises on the board; to identify strengths and limitations of competing theories of moral development through group discussion of a case study). On the day of the classroom visit, the observer should check in a little early to see if the teacher has any last-minute thoughts, questions, or ideas about what s/he would like the observer to attend to during the visit.

The observer's role during the classroom visit

Explain to GSIs what you (or they, as peer observers) will do during the classroom visit. Most faculty and GSIs prefer that the observer remain as unobtrusive as possible, sitting quietly to one side and perhaps taking a few notes to draw upon later. The GSI should note the presence of the visitor, and encourage students to carry on as usual. Observers should avoid taking copious notes during the classroom visit, as this can be unsettling to GSIs and may also detract from the ability to watch classroom dynamics.

Following up the classroom observation

Debriefing sessions should be conducted as soon after the classroom visit as possible. If it is not possible to meet immediately after the section, a pre-established time for the follow-up session should be arranged and the observer should offer the GSI a few words of praise before leaving. When the teacher and observer do sit down to review the section, the GSI should always be allowed to offer their own impressions first. **Self-assessments are the primary means through which major learning takes place**. After the self-assessment, the observer may then offer his or her feedback, if the GSI is interested in receiving it. Observers should <u>always</u> start out by noting positive features of the GSI's classroom performance, providing specific examples, and only then describe places where a different tack might have been taken. Observers should <u>describe</u> what they saw, taking care to avoid critical or evaluative language, and limiting constructive criticism to the 2-3 most salient areas. Finally, if a second classroom visit is scheduled for later in the semester, the observer and GSI should identify 2-3 areas that the GSI will track and work on during the semester and follow up on these areas during the later visit.

Appendix D
Readings: An Annotated Bibliography

Backdrop for the Seminar

1.   Ramsden, P. (1992). Learning to Teach in Higher Education. New York: Routledge, Chapman and Hall.

      The arguments put forth in this book support the philosophy of teaching and education fostered in this seminar and, more generally, in the work of the Graduate Student Instructor Teaching and Resource Center.

2.   Eble, K. (1987). "Defending the Indefensible". In N. Chism (Ed.) Employment and Education of Teaching Assistants: Readings from a National Conference. Center for Teaching Excellence: Ohio State University

      This position paper provides a brief history of TAships and summarizes some key arguments in favor of closer faculty-GSI collaboration and discourse in large undergraduate courses.

3.   Eimers, M. (1990). "Background and Experiences of New Faculty". Instructional Developments, $\underline{1}$(3), 12-15.

      This paper provides a candid portrayal of how new faculty members spend their time. Perhaps not surprisingly, faculty devote the vast majority of their time during the first year to teaching. What is surprising, however, is how deeply this cuts into time for launching research programs. One implication of this paper is that better preparation for teaching during graduate school might facilitate a more balanced transition to the faculty ranks.

4.   Boice, R. (1991). "Quick Starters: New Faculty Who Succeed". In Theall, M. & Franklin, J. (Eds.) New Directions for Teaching and Learning, $\underline{48}$, 111-121.

      In this paper, Boice describes strategies used by new faculty who get off to productive starts in both teaching and research pursuits. Among the strategies these individuals use are devoting less time to preparing to teach, but allowing regular time for discussions with colleagues about teaching itself. This strategy is one that faculty members can help to inculcate by regularly discussing teaching with GSIs in large lecture classes.

Establishing a Collaborative Relationship

5.   Boehrer, J. & Chevrier, M. (1991). "Professor and Teaching Assistant: Making the Most of a Working Relationship". In Nyquist, J., Abbott, R., Wulff, D. & Sprague, J. (Eds.) Preparing the Professoriate of Tomorrow to Teach. Dubuque, Iowa: Kendall/Hunt Publishing.

This article provides a brief and lucid overview of some basic ingredients of faculty-GSI working relationships. Though certainly not comprehensive, it does provide a crisp, cogent introduction to some key issues, including mutual feedback and discussions about teaching objectives.

6.   Romer, K. & Whipple, W. (1992). "Collaboration Across the Power Line". College Teaching, 39(2), 66-70.

This short but provocative paper examines how power and authority structures can influence teacher-student relationships. Though it focuses on faculty-undergraduate relationships, it is equally pertinent to faculty-GSI and GSI-undergraduate collaboration in teaching and learning. It is central to the teaching premises inherent in Theory 3 presented in Ramsden's Learning to Teach in Higher Education (see number 1 above), and dovetails with the key arguments about teaching and learning presented in Belenky et al.'s Women's Ways of Knowing.

Supervision

7.   Sundgren, A. (1991). "Working the Crowd: Organizing and Controlling the Mass Class". In R. McGee (Ed.) Teaching the Mass Class (2d edition; pp 108-119). Washington, DC: American Sociological Association.

This paper contains an interesting section (pp. 111-113) on organizing GSIs in large enrollment courses. Although the author hedges a bit on the importance of regular, weekly meetings with GSIs and takes an admittedly heavy-handed and controversial stance in advocating that faculty design lab/discussion assignments without actively soliciting GSIs' input, it is included because it provides several thoughtful suggestions for how to organize and calibrate GSIs' work in the large enrollment course throughout the semester.

8.   Kain, E. (1989). "The Selection, Training and Use of Graduate and Undergraduate T.A.'s for Large Classes". In E. Kain & S. Immel (Eds.) Training Teaching Assistants: Materials for the Selection and Training of Teaching Assistants in Sociology Courses. Washington, DC: American Sociological Association.

This paper provides a comprehensive and thorough discussion of how to maximize the use of GSIs in large enrollment courses. Although portions of the paper concentrate on institutional issues unrelated or only remotely pertinent to the teaching assignments of faculty and GSIs at Berkeley, it is included because of its scope and concrete suggestions concerning (a) group supervision and (b) involving GSIs in the planning of instructional objectives for lab/discussion sections.

Faculty and GSI Perspectives on Large Lecture Courses

9.   Stone, Walter (1992). "You Can Get Good Help These Days: Working with Teaching Assistants in Large Lecture Classes". In Shea, M. (Ed.) On Teaching, Volume II. Boulder, CO: University of Colorado Press.

Despite a mildly pejorative title and several controversial views (e.g., that GSIs' grading judgments affect final course grades far more than anything the professor does), this paper is of interest for two reasons. First, it provides a reasonably representative example of how many faculty members view their supervisory role with GSIs; and second, it includes some interesting thoughts concerning the goals of large lecture courses, regular meetings with GSIs, visiting GSI's classes, and struggling with philosophical differences in how to approach course content. It may be interesting to contrast the perspective taken in this essay with the "guerilla tactic" perspective of the GSI described in Section II of Segerstrale's paper.

10.   Segerstrale, Ullica (1984). "The Multifaceted Role of the Section Leader". In Gullette, M. (Ed.) The Art and Craft of Teaching. Cambridge, MA: Harvard University Press.

This paper portrays the GSI's "side" of the faculty-GSI working relationship. It provides a thoughtful description of the various roles GSIs see falling to them, including the mildly controversial position that one of their roles involves mediating between faculty and students.

Pedagogical Articles of Interest to Faculty Supervising GSIs

11.   Menges, R. & Rando, W. (1987). "Graduate Teaching Assistants' Implicit Theories of Teaching". In N. Chism (Ed.) Employment and Education of Teaching Assistants: Readings from a National Conference. Center for Teaching Excellence: The Ohio State University.

This study explores some of the beliefs about teaching more fully developed in the Ramsden text (number 1 above). It may be of use to faculty supervisors, in that it shows how graduate students' beliefs about teaching and learning influence the behavior they demonstrate in the classroom -- including what they are likely to do to resolve a classroom "problem" once they have diagnosed that one exists.

12.   Monk, G.S. (1988). "Student Engagement and Teacher Power in Large Classes". In Bouton, C. & Garth, R. (Eds.) New Directions for Teaching and Learning, 38, 7-12.

This interesting paper examines how a math professor dealt with complications arising from power issues in teaching (introduced in the Romer and Whipple paper, number 6 above) as he attempted to guide GSIs in the use of collaborative learning techniques.

13.   Hatch, D. & Farris, C. (1989). "Helping TAs Use Active Learning Strategies". In Nyquist, J., Abbott, R., & Wulff, D. (Eds.) New Directions for Teaching and Learning, 39, 89-97.

This paper provides some helpful illustrations for how instructors responsible for large courses can help GSIs transcend concerns about helping students "figure out what the professor wants to see" and instead help students discover the critical tools of their disciplines. The "workshop" model described in the section on "Art History TAs" could be adapted for weekly GSI meetings (cross-reference with the suggestions in Kain's paper, number 8 above).

Appendix F

Graduate Student Instructors (GSIs) with prior teaching experience at Berkeley are able to provide a unique and valuable perspective on faculty-GSI collaboration in large enrollment courses. Although the ideas and experiences of GSIs vary somewhat by discipline and by experience level, there are some striking similarities in the recommendations that they make. In the fall of 1992, a number of senior GSIs from the sciences and social sciences gathered for a series of meetings focusing on teaching in large enrollment courses. This is an attempt to summarize the key issues and recommendations emanating from those meetings.

1.   The course instructor as role model

Experienced GSIs who had taught with faculty members in large enrollment courses felt they had learned a great deal about teaching simply by attending the instructor's lectures. Some recalled memorable teachers who captivated the class' interest through stimulating presentations and/or teaching innovations in the lecture hall (e.g., taking time out from lecture to have the class write their ideas about a topic -- sometimes even leaving the room for brief periods to give students time to think). Observing lectures gave GSIs ideas about what to try, and what not to try, in their own classrooms. Most GSIs recalled formative experiences in which they were inspired or disinclined toward teaching by the instructor's degree of interest in and enthusiasm for teaching. GSIs who taught with faculty members who "put a lot of themselves into their class" said that they valued teaching and found it important. Other GSIs reported having been affected by faculty who viewed teaching as a nuisance, albeit a necessary evil.

Although many GSIs appreciated having had course instructors as role models, virtually no one could remember an instructor who had actually <u>discussed</u> their ideas about teaching. One GSI's comments were typical: "Nobody ever says 'Here's what I do. Here's what I think you could do. What do you think?'" GSIs also felt largely on their own in learning how to lecture. Many arrived at the strategy of watching students in class to learn which of the professor's teaching techniques and styles of presentation went over well with students (and which didn't) but they wished they had had a forum in which they could have discussed their experiences. Thus, despite the rich potential of role modeling, GSIs rarely learned from course instructors why they chose to present material in one particular sequence or manner rather than another, what they saw as the important components of an effective presentation, or how they knew if instruction was going well.

2.   Orientation to teaching and course goals

Most GSIs met with course instructors before the term began, though such meetings were often largely administrative. GSIs appreciated courses in which the pre-semester orientation covered not only the syllabus and the GSIs' duties in the course, but also outlined how section activities were expected to help accomplish the course's overall goals. They felt valued when the instructor included their names on the course syllabus, required section attendance, explained to students what would happen in sections, and emphasized how section activities would help accomplish the

course's goals and objectives. The most commonly agreed upon point was that it was extremely important to learn from the instructor what goals s/he had for lab discussion sections.

3.   Duties and responsibilities

Although GSIs' roles in large enrollment courses varied somewhat across departments, all were responsible for grading and for one or more forms of instruction in the course (coordinating lab sections; leading discussions; working problem sets; answering questions about homework and course content in sections and/or in office hours; giving occasional lectures to the entire class). GSIs in the sciences and social sciences generally felt that the activities asked of them were reasonable, but also appreciated instructors who recognized that an overload of actual contact hours left very little time for course-related reading or instructional preparation. This was of particular concern to GSIs responsible for developing their own section curriculum, though it was also raised as an issue by GSIs who received more explicit guidance about what to do during sections each week.

4.   Guidance during the semester

The degree of contact GSIs had with course instructors differed markedly, both by discipline and among different professors within the same department. Although about half of the GSIs polled met with the course instructor on a weekly basis throughout the semester, another half saw the instructor only infrequently, occasionally received directives by memos or e-mail, or never saw the instructor at all once the semester began. Concerning the level of guidance GSIs received from the course instructor, most GSIs who taught discussion, quiz, or problem-solving sections reported that only rarely were any attempts made to calibrate instruction across multiple GSIs and sections. GSIs who taught laboratories received explicit guidance -- primarily concerning lab practicals and activities -- but rarely had an opportunity to interact directly with the course instructor since lab information was usually conveyed by a lab coordinator rather than by the course instructor. Notable exceptions certainly existed, and some GSIs recalled courses in which the instructor held regular meetings to discuss the substance of the course, and to coordinate learning that took place in lab/discussion sections with material presented in lectures. By and large, however, such experiences -- though highly valued by GSIs -- were few and far between.

5.   Curriculum design for lab/discussion sections

The GSIs surveyed last fall were extremely interested in trading views concerning instructional objectives in lab/discussion classes, and in learning how sections fit into the overall aims and objectives of various courses. As described above, two general sets of experiences stood out. In some courses, GSIs were given carefully designed activities to carry out in their sections, but had little or no input into the design of these activities. In the most extreme cases, these GSIs were discouraged from innovating or deviating from pre-planned section outlines at all. Experienced GSIs in courses such as these acknowledged that undergraduates probably received much more uniform experiences across the various sections of a course, but said that they felt removed from the teaching process. In many instances, being left out of the instructional development loop led

GSIs to feel like "cogs in a wheel" (as one GSI put it) and adversely affected their motivation. A second group of GSIs had a rather different set of experiences, commonly being given complete freedom and authority to design and evaluate instruction in their own sections as they saw fit. Although more experienced GSIs tended to appreciate this flexibility, newer GSIs found it problematic. GSIs generally found it helpful when course instructors were clear and directive about which specific <u>concepts</u> everyone <u>had to</u> present in sections each week. Some went on to recommend that faculty offer newer GSIs some tips about possible modes of presentation, especially early in the semester when new GSIs were still uncertain about how and where to begin.

At minimum, GSIs felt that faculty involvement in helping to plan sections was important to establish some common guidelines. They pointed out that many undergraduates only want to be in sections where GSIs will tell them exactly what they need to know to receive "A"s on reports and/or on the exams. These undergraduates value most highly GSIs who do not "waste students' time" teaching for critical thinking; they outline chapters, exhaustively review key lectures or readings, and prepare summary handouts. In his book, Paul Ramsden reminds us that single goal-oriented teaching can arise in both lectures and sections, when students are tested for "superficial" rather than "deep" learning. Although some faculty attempt to deal with inequities across sections by standardizing scores within each section, GSIs believe faculty involvement in planning the curriculum is a much more reasonable solution in helping to establish common expectations and practices while minimizing dissension among GSIs and students alike.

GSIs had several thoughtful suggestions about how they could share equally in designing section material. One successful practice was suggested by GSIs who had taught in classes where a different GSI or team of GSIs was responsible for preparing the lesson plan for sections each week. In such courses, the faculty member often took the lead in designing the first week's curriculum, with experienced GSIs following next and the least experienced GSIs taking responsibility for lesson planning only later in the semester. Ideas about teaching were regularly discussed in weekly meetings, and GSIs could sometimes also draw from the experiences of past GSIs (some course instructors kept a file of old handouts, or a library of index cards on which GSIs described what worked, and what did not, in each week's section). This method helped GSIs to feel more involved in the teaching process, while insuring that instruction across multiple sections was kept reasonably consistent.

6.   Practices that promote coherence across multiple GSIs and sections

GSIs had several suggestions for helping to promote a sense of coherence and unity across multiple teaching staff in large enrollment courses. First, they suggested giving undergraduates a handout summarizing the office hours of <u>all</u> GSIs in the course, so that each student could visit any member of the teaching staff for assistance. Second, they recommended maintaining a clearinghouse of supplemental handouts developed for undergraduates by different GSIs in the course. The clearinghouse might be in a central GSI office, or (less optimally) could take the form of manila folders outside a GSI or faculty office. The clearinghouse has two main benefits. First, it allows ambitious GSIs with the time and interest in developing educational materials to try their hand at doing so. Second, the clearinghouse gives all students in the course (and not just those assigned to a given GSI) equal access to all supplemental course materials, negating any unfair advantages. Collective office hours and a clearinghouse for handouts promotes a sense of unity among teaching staff and obviates any divisive competition for access to the "best" GSIs.

GSIs also recommended that the faculty member and all GSIs meet together to develop the exam, to prioritize what students must and should know, and to generate questions agreed upon by the entire group. This practice differs in some important respects from a commonly used strategy in which individual GSIs or committees of GSIs develop and submit exam questions. When this practice is used, only certain questions end up being used for the exam, and these questions frequently come from more experienced GSIs who have a better idea about what exam questions should test. When certain GSIs' questions are used more often than others, students who have not been exposed to that GSI's line of thought may be at a competitive disadvantage relative to the students who participate in his or her sections. By developing exams together, newer GSIs can engage in discussions about testing philosophies and "good" test questions, thereby developing a clearer sense of what is important to test.

7.   Ways that faculty help promote growth in teaching

When asked which aspects of teaching in large enrollment courses had enhanced their own development as teachers, GSIs pointed to three variables. Two have already been described. First, GSIs were able to pick up some ideas about lecturing from sitting in on lectures, and from delivering guest lectures themselves, although they also said that they would have liked more of an opportunity to participate in discussions of this form of teaching with faculty. Second, GSIs learned a great deal about teaching in courses where there were regular discussions about the substance of the course and about different strategies for approaching material. Third, GSIs who taught in courses where faculty members watched them teach and offered feedback on actual in-class performance found this to be a useful experience. GSIs recommended the experience, but qualified this by pointing out that it was helpful only when faculty observers treated them respectfully, did not interfere with instruction, and complimented what they did well in addition to providing constructive criticism in private after the observation.

8.   Summary

By and large, experienced GSIs proved to be quite invested in their teaching roles. They valued contact with course instructors and appreciated clear and ongoing communication concerning the aims and objectives of their sections. They also appreciated it when instructors would actively integrate sections with class lectures. Experienced GSIs valued highly the opportunity to experiment with different styles and teaching methods and to bring their own personal touch to sections. They recommended that instructors keep track of successful teaching ideas and share these with GSIs who staff the course in subsequent years. GSIs found it useful to develop exams jointly, and appreciated instructors who would take their side in administrative, teaching and grading disputes until things could be sorted out. Most of all, they valued opportunities to think regularly about and discuss teaching, and found that the courses in which such discussions occurred most frequently were the ones that ended up being the most seamless, coherent and problem-free.