

2002

Making Groupwork Work: Ensuring Instructional Efficacy In The Student Teaching Internship Through The Implementation Of Complex Instruction

Charles Rathbone

University of Vermont, charles.rathbone@uvm.edu

Nancy Heffernan

University of Vermont

Liza Howrigan

University of Vermont

Gillian Kolodny

University of Vermont

Follow this and additional works at: <https://scholarworks.uvm.edu/cessfac>



Part of the [Curriculum and Instruction Commons](#)

Recommended Citation

Rathbone, Charles; Heffernan, Nancy; Howrigan, Liza; and Kolodny, Gillian, "Making Groupwork Work: Ensuring Instructional Efficacy In The Student Teaching Internship Through The Implementation Of Complex Instruction" (2002). *College of Education and Social Services Faculty Publications*. 13.

<https://scholarworks.uvm.edu/cessfac/13>

This Article is brought to you for free and open access by the College of Education and Social Services at ScholarWorks @ UVM. It has been accepted for inclusion in College of Education and Social Services Faculty Publications by an authorized administrator of ScholarWorks @ UVM. For more information, please contact donna.omalley@uvm.edu.

Making Groupwork Work:
Ensuring Instructional Efficacy in the Student
Teaching Internship Through the
Implementation of Complex Instruction



Charles Rathbone, PhD.,
Nancy Heffernan, '02 UVM,
Liza Howrigan, '02 UVM,
Gillian Kolodny, BS Ed. UVM

Making Groupwork Work: Ensuring Instructional Efficacy In The Student Teaching
Internship Through The Implementation of Complex Instruction
Charles Rathbone, Ph.D.

INTRODUCTION

For me to feel success as a teacher educator, I have to see evidence that the students of my students have learned in important ways. I know I can change the teaching practice of my undergraduate students. What's most important for me is that those changes result in important and documented achievement in their classrooms. This symposium is the story of how my students and I accomplish that goal together. My paper addresses how I readied my students for the task: the papers of Nancy, Gillian, and Liza address the specific implementation of Complex Instruction in their student teaching classrooms.

Background For The Study

I've been teaching a long time. First adolescent urban dropouts. Then "Junior High" schools. Then college. I started in Vermont about the same time as the Open School movement. With a background in learning and human development, I became fascinated with the possibilities suggested by the British Infant Schools: family groupings, integrated days, head teachers, inquiry based curriculum, excited learners. I loved watching multiaged groupings of children reason their way through fascinating problems and saw the power of "more able peers" provoking learning in their classmates. Yet no matter how intense the inquiry, it always seemed there were those learners who "took off" and those learners who were swept along on the ride. Some of latter, barely. I knew that even in the best of the multiage classrooms, there were still children, regardless of age, who struggled. They struggled to learn, they struggled to be a part of the group, they struggled to establish their place in great swirl of school. And as years went on, their struggle often turned to resignation and expected failure. They became quiet. They became disruptive. They might come to school and be treated as one of the gang. I had my doubts that they actually were. Gang maybe. One of the gang, no.

In the early 1990s, I began to think the explanation some children weren't learning even in the richest of learning environments lay somewhere beyond the realm of psychological theory. After completing a study of successful multiage teaching practice, issues of participation in successful learning events seemed to me to be as much an issue of the "group" as the "individual." It seemed to me that for children who were called unsuccessful learners, their conversion to becoming (and believing they had become) successful learners needed to be orchestrated within the classroom group as well as with the individual child himself. Peers needed to see the child as "able" for that child to begin to see him/herself as "able." And in fact, the child needed to be successful. Academically successful. Not merely cooperative, but actually academically successful.

During this time I read Vygotsky and I read Cohen. Vygotsky supported my ideas about transactions with more able peers. Cohen supported and extended my ideas about the influence of the group on the individual. Cohen also gave me the construct to

explain what I was seeing: *expectations based on status* were playing out before my eyes. Cohen, the sociologist, advocated status treatments in the context of groupwork to address the issues of non-learning I had noticed in multiage settings. She aptly called her kind of groupwork, Complex Instruction (CI).

The Opportunity

During my last sabbatical, I had the opportunity to study with Elizabeth Cohen and her colleagues. Since then, with support of the Vermont Institute for Science, Mathematics, and Technology and the Vermont State Department of Education, a colleague and I have been able to establish several small centers of practice and research in Complex Instruction. I've seen CI have a dramatic effect on groups of children in elementary, middle, and increasingly, secondary settings. I'm convinced that while not a panacea, CI can dramatically improve learning for kids who have been "out of the loop" without negatively impacting those learners who have always been "in the loop."

Last Fall, I was presented with another opportunity. I began a new teaching assignment. I began teaching Principles of Classroom Management, the course in our program that parallels our elementary student's student teaching internship. To my mind, this was the juiciest of teaching assignments. The "Plum" of them all. I've always thought that learning occurs in the intersection of a classroom's academic and social structures. If a teacher knows how to recognize and control these structures, she can make some pretty interesting learning happen for her students. And if she can implement CI, then she can make that same learning happen for all her students. I wanted my senior students to have this same opportunity.

My goal when the course began was to get my students to a point where they could "see" the academic and social structures playing out before their eyes in their classrooms. I wanted them to be able to talk about them and be able to control them in ways they wanted to control them. Most of all, I wanted my success as a teacher educator to be that my students' school children would learn. I wanted to work through my students to effect learning in their learners. I wanted my students to feel the power of that certainty. I wanted them to know they could teach so children learned. I knew CI would be the vehicle. This symposium is the story of that how that goal was achieved.

My contribution is laying out the path I took to teach CI to my students. They will address what it was like to be on the receiving end of that instruction and how they were able to implement CI in each of their very different classroom settings.

COMPLEX INSTRUCTION

Status, Participation, and Learning

Basic research in the 1960s established the fact that individuals in a group differ as to how they are perceived by others in the group. Certain individuals are perceived to have more prestige and power than others in a group during a group task (Berger, Cohen,

and Zelditch, 1966, 1972). Having prestige and power is having status within the group and status carries with it certain behavioral expectations. Behavioral inequalities are the result of differential status expectations (Cohen and Lotan, 1997). When this research is applied to schools, Berger and others showed that children in school classrooms fall into a particular status order and that status order has clear effects on learning (Berger, Rosenholtz, and Zelditch, 1980).

In a group task, if a child is perceived by other children in the group to have nothing particular to contribute to the task, that child will have a difficult time contributing to the group process. The child may try but s/he won't be heard or paid attention to. The child will have little influence over the group task. In short, the child will have low academic status. Cohen and her associates have established a powerful relationship between status, participation in a group, and learning outcomes (Cohen, Lotan, and Leechor, 1989). If a child is perceived by peers to have high status for a given task, then observations show that child will have high rates of talking and working together with other children in the group and as a result, will have high rates of learning.

$$S^+ \rightarrow T\&W^+ \rightarrow L^+$$

The reverse is also true.

$$S^- \rightarrow T\&W^- \rightarrow L^-$$

If a child is perceived by peers to have low academic status for a given task, then observations show that child will have low rates of talking and working with other children in the group and as a result, will have low rates of learning.

Cohen and others have established that status order in a classroom is a co-status variable combining friendship connections (peer status) and academic prowess in high stakes academic tasks (academic status). In some cases, a child with lots of friends will have influence in group work even though the child is perceived not to be particularly good at the task by his friends (peer status over academic status). In other cases, a child may be perceived to know a lot about a task even though the child doesn't have particularly strong friendships in the room (academic status over peer status). Both or either can operate to make the individual influential in a given group endeavor. Therefore, Cohen has reasoned that the best measure of status in classroom learning situations is a measure of co-status that combines the two (peer and academic status).

Knowing the background of expectations states theory is important in understanding how status operates to affect learning. Because the research linking perceived status, talking and working together, and learning is so clear, status treatments are invoked for children who are observed to be non-participants in groupwork. Their lower status is assumed. Since the goal of CI is to get them participating (talking and working together with their peers), teachers are usually not asked to assess the status order of their classrooms. Their focus children should be the non-participating children

whose lower status is assumed. Changing participation rates is the goal for eventual status treatments.

Groupwork

CI is a form of cooperative learning with important variations from conventional models. At the heart of CI is groupwork. Teachers use group processing roles (facilitator, reporter, recorder, materials manager, for example) to facilitate groupwork. Teachers make sure collaborative norms are a part of the classroom social structure so that children know cooperation is part of what is expected in their classroom.

Groupwork in CI works best with certain curricular structures. CI groupwork occurs around a "*big idea*." Four to six learning activities occur simultaneously. Each activity addresses some aspect of the big idea. The activities are *rich*. They may be *uncertain* in that there are several ways to reach an answer and there may be more than one answer possible. There may be several ways to carry out the activity and to demonstrate what you've learned as a result of the activity. Once finished, the group will know something about the big idea as a result of having done the activity. Over a series of days, each group will rotate through each activity. At the end of the CI *rotation*, every child will have done each activity addressing the big idea. Every child will have heard and seen every other children in the classroom talk about or demonstrate how they did their activity. And every child will have a greater chance to participate in an activity because of the richness of the activities.

These groupwork activities are *multiple ability activities*. The activities are designed with many individual learning abilities in mind so that no single ability becomes the sole avenue for successfully accomplishing the activity. Being able to sequence numbers or being able to see details in a picture or being able to think ahead are multiple abilities that can be as important as the ability to read, for example, in multiple ability activities. Because of the multiple abilities designed into CI activities, more children have access to the learning than if success in the activities were dependent only upon good reading and good writing. CI rotations are most successful when the tasks are uncertain and when the task is a true, rich, group task (Cohen and Cohen, 1991).

Status Treatments

Because inequalities in participation rates are linked to conditions of unequal status among participants in group work, CI teachers employ two status treatments to equalize status. Higher participation follows status equalization within groups.

The first status treatment is called The Multiple Ability Treatment. The Multiple Ability Status Treatment is done by a public review of several of the multiple abilities built into the learning activities of a rotation. The review is done by the teacher during the orientation to groupwork. The teacher reviews pertinent multiple abilities with her class and posts them for all to see. By doing this, the teacher is pointing out for all students that there are many ways to be successful in these engaging tasks, thus operationalizing the norm "we are smarter together than any one of us is separately." The

teacher adds to the list in subsequent orientations, often inviting and accepting suggestions from children in her class. This list is of cognitive abilities, or abilities that directly lead to success in the task. These abilities are not social abilities. Social abilities are a means to an end, the end being advanced cognitive learning.

The second status treatment is called "Assigning Competence." This treatment is done to point out the contribution of a lower status child to achieving the group's goal. When the teacher sees such a contribution being attempted or made, the teacher moves into the group and points out to the group how the contribution is valuable to the group. There are four criteria to assigning competence: naming the child, naming the multiple ability, tying the multiple ability to the group task, and if possible, mentioning a high profile job or occupation that employs that ability. When effective, assigning competence will cause other children in the group to shift their perception of the potential contribution of the child in question. This usually results in the child gaining input to the group process. Cohen and Lotan (1995) studied the combined effect of these two status interventions in language minority and working class schools in the San Francisco area. The interventions boosted the participation rates of low status students without lessening the participation of high status students.

In summary, the twenty-year program of research and development led by Cohen and Lotan at the Stanford Center for Complex Instruction has shown Complex Instruction to be a particularly effective kind of cooperative learning strategy. It results in increased learning and achievement for all children in groupwork situations and it combines strategies and methodologies that impact both the social and academic structures of classroom organization.

THE COURSE

Purpose

Principles of Classroom Management and Organization is a two credit campus based course that senior students take while student teaching. Its purpose within the program is to support and inform their learning how to create and maintain the physical and instructional classroom environment. It is also where they learn how to create a disciplinary structure in the daily flow of their classroom life.

Students come to me with well-developed teaching schema for the various disciplines they'll be required to teach. They have hundreds of hours of integrated and supervised campus and field based application under their belts. What they don't have is any practice with the management and organization of the classroom environment as a whole event. They've thought about teaching reading, they've thought about teaching social studies, they've taught lessons in every discipline, they've set up science centers, they've designed interdisciplinary units. But they haven't put it all together on a day in, day out basis. They haven't been responsible for shaping the behavior of a room full of children on a day in, day out basis.

This course is a central support structure for this effort and it is one place where they come together as peers to discuss the ins and outs of their attempts to be the conductor, center stage, of the classroom orchestra. By the time this course is over, they need to be confident in their capacity to understand, articulate, and apply strategic management structures leading to meaning based student learning communities. If they fail, they run the risk of becoming teachers whose management structures occur only through the authoritarian imposition of will.

The Overall Structure

I have the tendency to take any relatively simple idea and make it unnecessarily complicated. This was not my goal for this course. I worked hard to keep the big idea elegantly simple. I decided the structure of the course would rest upon one big idea: *the opportunity to learn resides at the intersection of the social and academic classroom structures*. To create an environment for learning, you had to be able to strategically manipulate both the social and academic structures of your classroom, often in concert, often to achieve a given end.

By social structure I meant the variety of social friendship networks that exist and evolve in a classroom, networks that often mirror the social relationships of the various parent communities represented in the school. By academic structure I meant the way the interns worked with the following classroom routines: the daily schedule, instructional grouping patterns, the orchestration of times of high and low energy, the ways children could show their knowledge, and the variation of teaching style to gain certain instructional outcomes. By learning, I simply meant an observable change in behavior that resulted from either a personal, social, or academic learning. Upon reflection, it seemed to me CI could be the perfect venue to achieve the goal for my students to become analytical and thoughtful designers of meaning based classroom environments. CI involves the manipulation of social relationships to achieve an academic end. Makes sense. The design trick was how to separate out the various elements of CI so they made sense, were necessarily sequential, and stayed clear of completely overwhelming students who no matter how capable, often teeter on the brink of complete meltdown. To quote a well known and since departed sportscaster, my goal was neither to underwhelm nor overwhelm my students. My goal was to merely "whelm."

The Plan

My classes involved thirty one senior students: fourteen in Section A. (four males and ten females) and seventeen in Section B. (two males and fifteen females). By the end of the course, one female from each group had changed her student teaching assignment to participation credit. Students could attend either section as the term wore on and several took advantage of that opportunity because of the eccentricities of timing field work and university course work.

The idea that learning occurs at the juncture of a classroom's social and academic structures imposed a clear logic on the epistemology of the course. Given this imposed

heuristic, my students needed to know and be able to do several very specialized strategic teaching "moves" in order to impact the learning of their students. I list them here along with the course content strand in which they occurred. I had a major assignment for each strand.

Classroom Structures Strand

1. identify and analyze the social and academic classroom structures
2. determine the status order of children in their classroom

Discipline Strand

3. understand misbehavior as a means to gain status in "the group"
4. properly engage and redirect children using the various goals of misbehavior
5. support children's learning through encouragement and a focus on multiple ability curriculum
6. establish and teach norms for collaborative behavior

Complex Instruction Strand

7. teach children to become efficient in their groupwork through the use of group processing roles
8. write rich groupwork tasks redundant around a big idea or essential question
9. manage a CI rotation of at least three multiple ability learning activities taught simultaneously and rotated among groups of learners on succeeding days
10. use the two status treatments (multiple ability treatment and assigning competence)
11. measure content outcomes by employing pre/post content measures

Caption Strand

12. document and describe what you know and are able to do with respect to manipulating the social and academic structures of your classroom to create learning situations for children.

I have to say I alone do not share the content responsibility for this course. Along with the student teaching internship, the course culminates the students' professional preparation. My students first started to learn about multiple abilities and multiple intelligences in their first year in our program. They learned about and began to apply the ideas of positive discipline were during their third year. The idea of teaching to a student's strengths and embedding meaningful assessments in your teaching cuts across their work in reading and writing, mathematics, science, and social studies. The idea that demonstrations of knowledge can take many forms, some developmentally based, some not, is apparent throughout the program. As a faculty, we are quite aware of what each of us teach and though the content connections across courses lack absolute intentionality, their occurrence is not at all unintentional.

I do take major responsibility for creating a coherence for many of these ideas in this senior level course. The coherence is necessitated by the concerns of practice my

students bring to me every week. They let me know if my theoretical ruminations stray too far from the already considerable latitude they grant me.

We meet for two hours and fifty minutes on one day across thirteen weeks of a semester. Each class period has time for a warm-up, discussion of practice, and a content dialogue tied to one of the ongoing assignments. Often the warm-up and discussion of practice take on the flavor of the ongoing assignment. That's the way we figure our way through the challenges practice offers to theory and equally as important, theory offers to practice.

The thirteen weeks is roughly divided into three equivalent chunks of content focus: the classroom as a social structure, discipline, complex instruction and captioning. The separation of areas of content is not neat and tidy however. The theoretical constructions underlying Complex Instruction and Positive Discipline are too mutually informing to keep them separate. Figure One. gives an approximation of how pieces of content from each section of the course connect to other sections of the course.

Overall, what happens in terms of the big picture is that my students learn to assess status order in the first third of the course. This task begins to support the complexities of organizing instruction to take into account student strengths. The middle portion of the course has classroom discipline as a focus. The theoretical position of positive discipline grows out of the individual psychology of Alfred Adler and central to its classroom application is the idea that behavior is motivated by psycho-social concerns. Every individual needs group membership and that misbehavior, at least in school settings, has as its goal the need to be recognized as a member of the classroom group. When we talk classroom management, we continue the analysis of status related issues begun in the first third of the course. We train our vision to see strengths called multiple abilities, learning strengths that go beyond being good at reading and writing. To this we add a strong focus on the recognition and encouragement of multiple abilities as a way to support student learning. One practical form of encouragement is Cohens's second status treatment, assigning competence. By the time students get to the third and last portion of the course, they are as ready as they'll ever be to design the multiple ability learning tasks necessary for organizing complex instruction rotations.

The Website

I decided to place the course syllabus on my website and at first, I was hoping this would be the primary means of access for my students to necessary materials for the course. My reasoning had to do with access. My students lives this student teaching semester were spread across at least three differing locations: their apartments or dormitory rooms, their public school classrooms, and my own classroom on the UVM campus. They were interacting with at least three important figures in their academic/teaching lives: their cooperating, mentor teachers, their university supervisors, and me. I wanted my students to be able to access course materials from any of these locations. I also wanted any of those significant "others" to be able to access the materials as well.

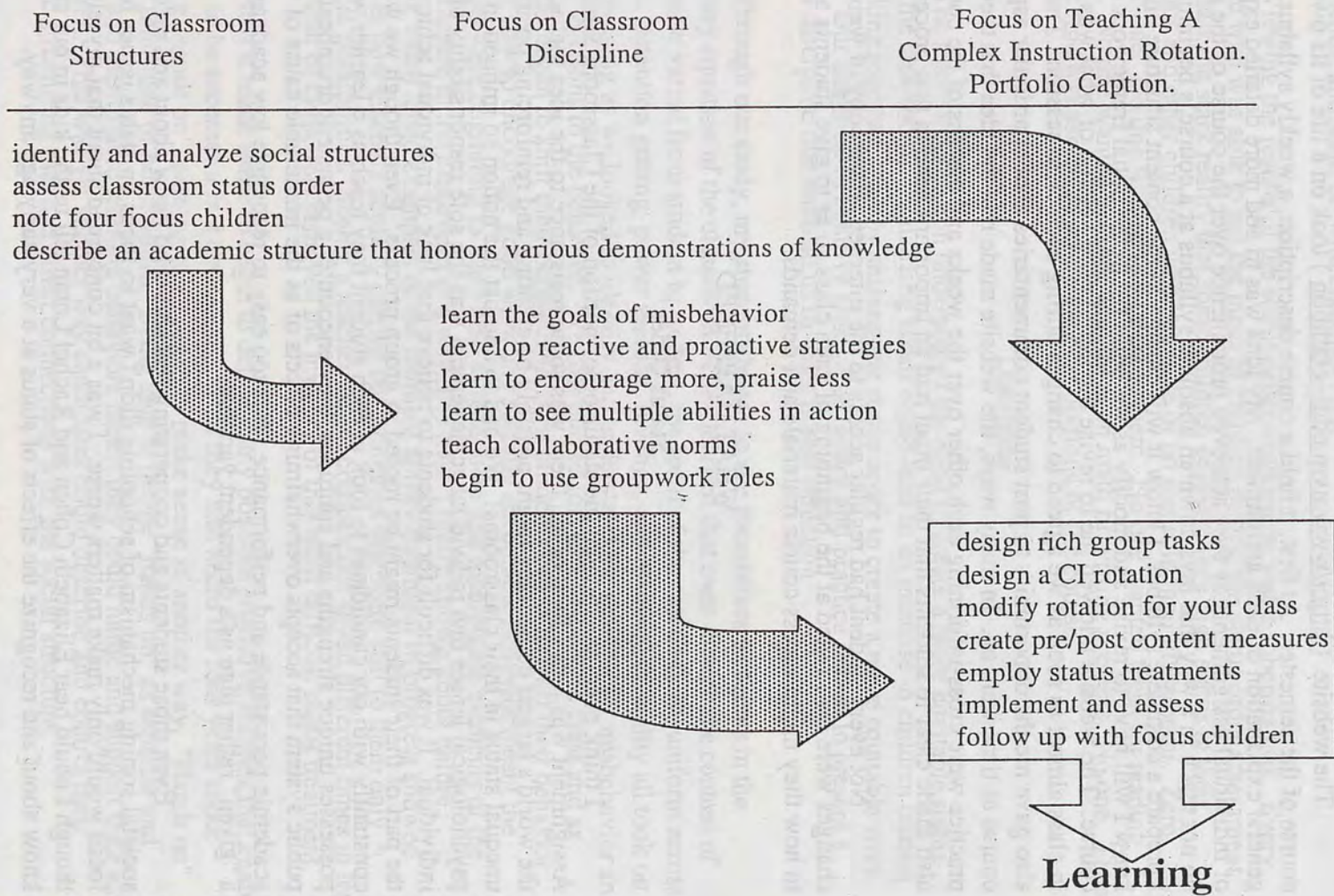


Figure 1. Content Flow Across Three Strands of the Course.

The website (<http://www.uvm.edu/~crathbon>) took on a life of its own over the course of the semester. At first, it held a course description, a weekly syllabus, and a general explanation of each assignment. My idea was to add more detailed explanations of individual assignments as they achieved prominence over the course of the semester. I do not teach in a way that lays down an absolute syllabus at a course's beginning. While I prepare a complete syllabus, I know it will change as the content structure builds and I know I will have to revise and modify as we build fill in the initial framework of the course. The website allowed me to revise the initial print version of what was to happen in class almost as soon as we agreed to changes during each class session. The website also gave me the opportunity to post student commentaries about particular aspects of the course as time went on. In many ways, the website made real the idea that theory and practice were cross-informing each other over the weeks and months of the course. It also made clear to students that their input had an important hand in that process.

Not every student had regular access to the internet. Hard copy of website changes were distributed at the beginning of each class so as to give students a choice as to how they might access course materials and demands.

WHAT HAPPENED ?

Status Order "

I think everyone thought the status order portion of the Classroom Structures Assignment was nuts! First of all, there was some resistance to the idea that schools in the world's largest democracy might possibly be creating and reinforcing positions of unequal status in their classrooms! We had to combat the notion so imbued in us by our psychological lenses that individual achievement was the sole responsibility of the individual. It was difficult for students to believe that lack of individual achievement on the part of their students might be rooted in group process. Even though we work constantly with our candidates to look at each student they teach as a learner who possesses unique strengths and aptitudes, they encounter a persistent drumbeat within the public system that accepts overwhelming effects of as the immutable cause of weak academic persistence and performance. It is too easy to recognize low academic status as a "given" rather than as a dependent variable.

Even those students and cooperating teachers who knew about and recognized the societal sorting mechanism of schooling didn't want to focus on status issues for fear the focus would only make matters worse. I was a bit concerned about that myself even though I could hear Elizabeth Cohen and Rachel Lotan tell us the kids in our classes all know about and recognize the effects of status at a very early age anyway.

And then there were those candidates who honestly thought there were no status issues in their classrooms. Their teachers were models of positive influence. They worked hard on making everyone feel good about themselves and each other. Their

children treated each other well every day. When issues occurred, they talked it out, made amends, and went on with classroom life.

Viewing the results of the status order assessment was a sobering task. Every candidate who was able to get the input of children during the status order assessment process saw the stark reality that some children enjoyed very high status in their classrooms and other children who had little or no status in their classrooms. Zero. Zippo. None. No one wanted to sit next to them. No one wanted them for reading partners. No one wanted to work with them on math or writing projects. No one. These dramatic findings served to set up the next portions of the course.

Discipline

The status information underscored the need to create a more equitable status order in the classrooms. Equalizing status could lead to an increase in children talking and working together, thereby shifting the status order to create a more equitable work climate. Our attention to Positive Discipline theory and practice served to present a model of discipline that enabled us to work in this direction.

Through our study, my students began to see themselves as agents in the disciplinary equation of the classroom. They learned that even though the content of misbehavior varied from student to student, the form of the can be fairly uniform across children. Attention getting, power seeking, revenge, and assumed disability all took on visible meaning as we looked to identify and understand the reasons for misbehavior and our own reactions to the behavior. We role played lots of situations in class and as candidates began to shift their perspective, their students began to shift their behavior. Learning how to encourage good work and socially acceptable behavior meant the candidates were beginning to learn how to recognize and manipulate elements of the social structure in the classroom in a way they hadn't really known about before. Watching video taped examples of the multiple ability treatment in progress showed candidates how teachers actually carried out strategies that were still to them only theoretical possibilities. Seeing a teacher assign competence seven different times in less than an hour of class time removed the mystery of this most difficult status treatment.

Now it made sense to begin to define many possible cognitive abilities that enable children to be successful in a classroom. What they had heard for four years about designing "hands on" learning tasks began to make sense in another way. "Hands on" covers a multitude of possibilities. Being able to define "hands on" as separate and distinct and identifiable learning behaviors meant they could name and support their use by children. This was yet another way candidates could describe and control their academic structuring that had direct connections with the social structure.

Complex Instruction

By the time the Complex Instruction Assignment rolled around, my students were pretty well set up for success, at least as far as they could be successful given their

classroom situations. I, of course, realized this better than they. By this time in the semester, we were all walking that line betweenwhelmed and overwhelmed. I can guarantee by this time in their semester, no one was underwhelmed!

We were rushed in our preparation. We'd shifted focus and lost one class day as we responded to the attack on the World Trade Center. Time was pinched for the final two class meetings. We weren't able to review and critique each other's activity, resource, and individual report cards. These are the "task cards" that accompany the materials for each activity in a CI rotation. Some students simply forgot to carry out a pre-test on their CI content. Others couldn't. But in some form or another, every candidate who had made it to November 1 in their student teaching internship was ready to do CI in some form with their students.

The actual doing of Complex Instruction is what my student colleagues are explaining in this symposium. I leave the actual classroom teaching explanations to them, the experts.

RESULTS

Instructor

Twenty five students completed the end of course assessment. Two were absent from class and four were working in classrooms the day the assessment was given. Table 1. shows results regarding the implementation of various parts of complex instruction. Over eighty percent of the candidates reported being able to introduce group roles, assign competence, and carry out successful work in terms of student learning. Eighty-six percent replied that their CI work was successful in terms of affecting children's learning in positive ways. This means that approximately three hundred ninety-six school children had a positive learning experience from the point of view of their interns. Of the total number of interns taking the survey, forty-eight percent were able to carry out pre/post measures of learning gain across approximately two-hundred sixteen elementary school children. Of the two hundred sixteen children, only five had post measures that were the same or lower than their pre tests. This means two hundred eleven children had actually reported learning gains based on pre/post measures.

In terms of the my success in being able to effect learning of the students taught by my students, it appears I was successful 86% of the time if the criteria is my students impressionistic data. It appears I was successful 48% of the time if the criteria is an actual position change in pre/post content measures. Viewing students' pre/post differences reveals fairly dramatic results. A small sample paired t-test was run on Liza, Gillian, and Nancy's pre/post data. Their results (Table 2.) were significant ($p < .0001$). I like knowing that by the higher standard, 211 school children learned something significant as a result of my teaching. I also know the sample of our three presentors is not unusual with regard to pre/post measures.

Table 1. Percentage of Response Data From End of Assignment Questionnaire for Complex Instruction.

Question	N	Yes	No	%Yes	%No
1. Were you able to introduce norms so they helped in your ci?	23	17	6	68	24
2. Were you able to introduce group roles so they helped in your ci ?	25	23	2	92	8
3. Were you able to do a clear orientation and wrap-up in your ci work?	22	14	8	56	32
4. Were you able to talk about multiple abilities in either orientation or wrap up?	25	17	8	68	32
5. Were you able to assign competence during your ci work?	25	21	4	84	16
6. Were you able to obtain pre-test data?	15	13	2	52	48
7. Were you able to obtain post-test data?	15	12	3	48	52
8. Was your ci work successful in terms of childrens' learning?	22	19	3	88	12

Table 2. Small Sample Paired t-Test on Difference Between Pre/Post Content Acquisition Scores

Student	Scores	N	s	t	df	p
Gillian Kolodny	pre 42.29	14	23.548	-8.285	13	<.0001
	post 84.86	14	12.133			
Nancy Heffernan	pre 3.33	21	2.708	-4.571	20	<.0001
	post 5.81	21	.402			
Liza Howrigan	pre 6.50	20	2.763	-6.80719	19	<.0001
	post 9.90	20	1.971			

Candidates

The most interesting data generated by the study resulted from the end of class survey completed by my seniors. I listed eighteen adjectives or short phrases and asked that they check the phrases that best described their experience with Complex Instruction. The results show that each of the two sections of students had different experiences with my teaching (Table 3.). The two groups differed significantly in their choice of "hard work," "fun," and "professional" to describe their experience. The group that had a higher percentage of students selecting "hard work" also had a higher percentage selecting "fun," "changed how I looked at things," and "rewarding." The group that had a higher percentage of students selecting "confusing" to describe their work, also had fewer selecting "positive," "rewarding," and "fun." On the other hand, this same group had more students selecting "empowering," "professional." The groups were about equal in their choice of "something I'll use again," "enlightening," "frustrating," and "engaging." When the ratings of both groups were averaged, the four highest ratings were "something I'll use again" (80%), "positive" (79%), "changed how I looked at things" (70%), and "hard work" (65%). And finally, no one in either group selected "boring," "not at all useful," or "just another teacher requirement fulfilled."

Website

I carried out an assessment of internet use part way through the semester, largely to clarify whether my efforts at maintaining the site had much meaning for any of the students. Results were edifying. Over the course of the semester, 86% of the students accessed the website at least once (Table 4.). The most frequent use was one to three times. Eight students accessed four to six times and four students accessed the site seven times or more.

Data related to student use of portions of the website are reported in Table 5. Predictably, the most frequent use was to read the individual assignments: they were the heart of what directed what we wanted to accomplish. Of those who accessed, everyone read at least one of the individual assignments at least once. Of particular note is the fact that the variety of options available to do individual assignments increased for two of the assignments as a result of classroom dialogue.

Least accessed were two categories of the website: access to other links, and access to the electronically posted readings. Neither of these categories held much significance to the class. I referred to other links infrequently and we ended up using a second set of readings much more than those posted electronically.

Table 3. Percentage of Responses to Complex Instruction Post Assessment Stem Queries By Section

Response Term	Sec. A (N=10)	Sec. B (N=15)	% for Sec. A	% for Sec. B	Ave. %s for Sec. A and B
1. hard work	5	12	50%	80%	65%
2. fun	4	11	40%	73%	57%
3. confusing	3	2	30%	13%	22%
4. like a puzzle	3	4	30%	27%	29%
5. something I'll use again	8	12	80%	80%	80%
6. boring	0	0	0	0	0
7. enlightening	6	9	60%	60%	60%
8. changed how I looked at things	6	12	60%	80%	70%
9. positive	7	13	70%	87%	79%
10. frustrating	4	7	40%	47%	44%
11. rewarding	5	9	50%	60%	55%
12. engaging	6	9	60%	60%	60%
13. empowering	5	5	50%	33%	42%
14. not at all useful	0	0	0	0	0
15. professional	7	6	70%	40%	55%
16. too much time, too little gained	0	1	0	7%	7%
17. just another teacher requirement fulfilled	0	0	0	0	0
18. negative	0	1	0	7%	7%

Table 4. Student Use of Website for Principles of Classroom Management, Fall 2001 (N=29).

Frequency	Overall Use Numbers	Overall Use Percentages
Not At All	4	14%
1-3 times	13	45%
4-6 times	8	28%
7 or more time	4	14%

Table 5. Student Use Of Specific Website Locations During Principles of Classroom Management, Fall 2001 (N=25).

Frequency	Read Syllabus	Read General Assignments	Read Individual Assignments	To Access Other Links	To Link To Library Readings
Not At All	0	3	0	15	17
Little	16	15	11	9	6
Frequent	9	7	14	1	2

I carried out a survey of student use of the website during the semester, largely to clarify whether the website was being used for any of the purposes intended by the students. Results were as follows. Overall, 56% of the students accessed the website at least once. Table 4. The most frequent use was to read the syllabus. Eighty percent of students accessed the site seven or more times.

Data on student use of specific website locations are reported in Table 5. Most frequently, the majority of students accessed the website to read the syllabus. Next, 16 of what appeared to be 25 students accessed the site to read general assignments. Of those who accessed the website, 17 accessed the site to read individual assignments. Only one student accessed the site to access other links, and two accessed the site to link to library readings.

Total website use was categorized into two categories: to access other links, and to link to library readings. Neither of these categories held much significance in the data. I accessed other links infrequently and we ended up using a small set of readings much more than those posted electronically.

INTERPRETATION OF RESULTS AND NEXT STEPS

The Course

I felt quite pleased with the results of this course. First of all, I had hard data that put before me the results of my teaching. I had met my goal at the highest level of quantitative assurance for almost half my students. At a less rigorous level, I'd met it for almost all my students. Clearly, the students of my students had benefited from what my students had been able to accomplish with them. And clearly, my students felt they were able to control aspects of their professional teaching lives that were unclear or non-existent to them before the course. The integration of Complex Instruction and Positive Discipline as vehicles to affect classroom discourse, talking and working together, works. My students can see it now, they can talk about it, they can quantify it, and they can increase the salient behaviors of their students that leads to more powerful learners, especially those students whose peers judge them incapable of meaningful input to the important discussions that make learning happen.

Next steps? Given the data in this study, several come to mind immediately.

1. Hone the readings for the course. I would have driven everyone crazy if I had insisted that we use the electronically stored readings. It was too much. The overall big idea was right. My implementation was too grand. I need to cut way back on required readings and place segments of some of them within our ongoing class time.
2. Keep the website going in its present form. Its responsiveness was valued by those who used it. A few students indicated their mentor teachers had use it and had found it very helpful in a variety of ways, not the least of which was how to support the students in their CI work. That's a good thing.
3. Continue to develop good short video segments of CI in action. In a subsequent follow up, students reported the iMovies of CI in action as being highly useful. They want more of them, especially at a younger age level.
4. Be clearer as to what constitutes the "academic structure." Status Order as a defining variable for social structure works. I need to develop a defining set of criteria for the academic structure.
5. Think about creating ways to link more directly with mentor teachers. Granted, resistance to this work surfaced with a few. Some resistance was grounded in their worry about working with "status." Some was a resistance to Cooperative Learning in any way, shape, or form. By far, most cooperating teachers were curious about how this form of collaborative learning was going to work. Their desire to learn more has to be honored and responded to.

6. Develop the capacity to carry out pre/post assessments earlier in the course. It is key to all the students, university and public school alike, being able to see how "smart" they've become. Effecting the pre/post assessment can't be left to chance because of time constraints at the end of a semester. If it's important enough to do, then it's important enough to do.

CONCLUSION

I have to worry about becoming a zealot with respect to CI. I realize this entire paper, while striving to achieve some level of objectivity, is fundamentally a subjective response to work I did. While Nancy, Liza, and Gillian have done fine work, they are by no means head and shoulders above the crowd. "The crowd," in fact, did surprisingly good work with what was a difficult series of assignments. I came in to the Fall semester wanting to make a change in the lives of school children through my students. It happened.

I believe there is such hope in all this. Permit me to boil that hope down into three conclusions I take as a final word. First, a key to increasing the right kind of participation for marginal children in a classroom setting may not lie in an "individual differences" paradigm. Pulling oneself up by one's own bootstraps just doesn't work here. I have come to believe the more proper explanation is one that looks at the group as causative. Second, student teachers can see the injustices perpetrated by damaging patterns of instruction and they can be taught to create and analyze more equitable learning environments in their borrowed classrooms. Third, teacher educators can be conduits between good theory and practice to make a real difference in the lives of students in the public schools.

References

- Berger, J. B., Cohen, B. P. & Zelditch, M., Jr. (1966). Status characteristics and expectation states. In J. Berger & M. Zelditch, Jr. (Eds.), *Sociological theories in progress* (Vol. 1, pp. 29-46). Boston: Houghton-Mifflin.
- Berger, J. B., Cohen, B. P. & Zelditch, M., Jr., (1972). Status characteristics and social interaction. *American Sociological Review*, 37, 241-255.
- Berger, J. B., Rosenholtz, S. J., & Zelditch, M., Jr. (1980). Status organizing processes. *Annual Review of Sociology*, 6, 479-508.
- Bianchini, J. (1995). *How do middle school students learn science in small groups? An analysis of scientific knowledge and social process construction*. Unpublished doctoral dissertation, Stanford University.
- Cohen, E. G. (1993). From theory to practice: The development of an applied research program. In J. B. Berger & M. Zelditch, Jr. (Eds.), *Theoretical research programs: Studies in the growth of theory* (pp. 385-415). Stanford: Stanford University Press.
- Cohen, B. P. & Cohen, E. G. (1991). From groupwork among children to R&D teams: Interdependence, interaction and productivity. In E. J. Lawler, B. Markovsky, C. Ridgeway, & H. Walker (Eds.), *Advances in group processes* (Vol. 8, pp. 205-226). Greenwich, CT: JAI Press.
- Cohen, E. G. & Lotan, R. A. (1995). Producing equal-status interaction in the heterogeneous classroom. *American Educational Research Journal*, 32, 99-120.
- Cohen, E.G. , Lotan, R. A., & Holthuis, N. (1995). Talking and working together: Conditions for learning in complex instruction. In M. T. Hallinan (Ed.), *Restructuring schools: Promising practices and policies* (pp. 157-174). New York: Plenum Press.
- Cohen, E. G., Lotan, R. A., and Leechor, C. (1989). Can classrooms learn? *Sociology of Education*, 62, 75-94.
- DeAvila, E. A., & Duncan, S. (1982). *Finding out/descubrimiento*. San Rafael, CA: Linguametrics Group.
- Leechor, C. (1988). *How high and low achieving students differentially benefit from working together in cooperative small groups*. Unpublished doctoral dissertation, Stanford University.
- Maruyama, G., & Miller, N. (1981). Physical attractiveness and personality. *Progress in Experimental Personality Research*, 10, 203-280.

- Mercer, J., Iadacola, P., & Moore, H. (1980). Building effective multiethnic schools: Evolving models and paradigms. In W. G. Stephan & J. R. Feagin (Eds.), *School desegregation: Past, present and future* (pp. 281-307). New York: Plenum.
- Rosenholtz, S. J. (1985). Treating problems of academic status. In J. Berger & M. Zedlitch, Jr. (Eds.), *Status, rewards, and influence* (pp. 445-470). San Francisco: Jossey-Bass.
- Tammivaara, J. S. (1982). The effects of task structure on beliefs about competence and participation in small groups. *Sociology of Education*, 55, 212-222.
- Webster, M., Jr., & Driskell, J. (1983). Beauty as status. *American Journal of Sociology*, 89, 140-165.
- Webster, M. & Foschi, M. (1988). Overview of status generalization. In Webster, M. & Foschi, M. (Eds.), *Status generalization: New theory and research* (pp. 1-20). Stanford: Stanford University Press.
- Zack, M. B. (1988). *Managing the classroom using cooperative groupwork: An assessment*. Unpublished doctoral dissertation, Stanford University.