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ABSTRACT

A case study focused on teachers' professional networks and how these influence the students' acquisition of literacy skills, particularly writing, at the International High School in New York City, which serves approximately 450 international students with minimal language skills. Observations were taken from three teachers as well as from students, and all took place during the 1996-1997 school year. The school's community, philosophies, and professional organization, and the conceptual design and curriculum components of the school's English language arts program, were examined. Findings suggest that: (1) the international environment places a premium on writing; (2) literacy fuels everything and is at the heart of how activities are constructed and enacted; (3) students are asked to demonstrate content knowledge by applying their ideas through writing assignments; (4) seeking and making connections among the disciplines is highly valued; and (5) collaborative work is essential for both teachers and students. (Contains 5 figures and a table of data.) (EF)

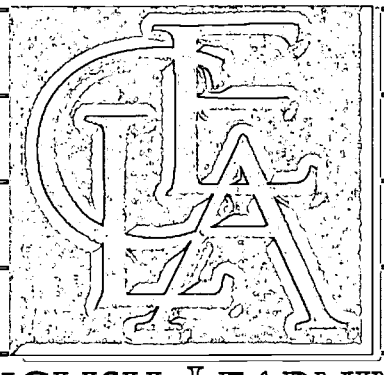
CELA RESEARCH REPORT

TEAMING TO TEACH ENGLISH TO INTERNATIONAL HIGH SCHOOL STUDENTS: A CASE STUDY

PAOLA R. BONISSONE

CELA CASE STUDY NUMBER 13005

NATIONAL RESEARCH CENTER ON



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TEAMING TO TEACH ENGLISH TO INTERNATIONAL HIGH SCHOOL STUDENTS: A CASE STUDY

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P.B.

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The Center on English Learning & Achievement (CELA) is a national research and development center located at the University at Albany, State University of New York, in collaboration with the University of Wisconsin-Madison. Additional research is conducted at the Universities of Georgia and Washington.

The Center, established in 1987, initially focused on the teaching and learning of literature. In March 1996, the Center expanded its focus to include the teaching and learning of English, both as a subject in its own right and as it is learned in other content areas. CELA's work is sponsored by the Office of Educational Research and Improvement (OERI), U.S. Department of Education, as part of the National Institute on Student Achievement, Curriculum, and Assessment.

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FOREWORD

The school door you will open as you read this case study reveals a very special place. Here students are actively involved in becoming highly literate; they are learning how language works in context and how to use it to advantage for academic purposes. Here, too, teachers are supported in their efforts to improve their teaching and to grow as professionals.

What makes this kind of environment possible? A team of field researchers and I have been exploring this question in a major five-year project for the National Research Center on English Learning & Achievement (CELA). This case study is one part of that project, which involves 25 other English programs nationwide. Each is providing English instruction to middle and high school students. Most are exemplary; some are more typical and give us points of contrast. Overall our study examines the contexts that lead to thought-provoking learning in English classes and the professional contexts that support such learning. This case report offers a portrait of one teacher within the contexts of both her school and her profession. We offer it to provide food for thought and a model for action for readers or groups of readers who wish to improve the English language arts learning of their own students.

The programs we are studying represent great diversity in student populations, educational problems, and approaches to improvement. The reports and case studies that comprise this project (listed on page 37) do not characterize programs as process-oriented, traditional, or interdisciplinary. Instead, they provide a conception of what "English" is as it is enacted in the classrooms of our best teachers, how these teachers have reconciled the various voices and trends within the professional community in their own practices, how their schools and districts support and encourage their efforts, and how in turn the contexts they create in their classrooms shape the high literacy learning of their students. The results have implications for curriculum, instruction, and assessment, as well as policy decisions, in English and the language arts.

In two cross-cutting reports, I have analyzed the data across all case studies for overarching patterns. In the first, I identify and discuss particular features of teachers' professional experiences that permeate these special programs; in the second, the features that characterize their instruction.

I am profoundly grateful for the cooperation and vision of the teachers and administrators who contributed their time and ideas so generously and so graciously to this project. It was indeed a privilege for the field researchers and me to enter into their worlds of learning – a place I now invite you to visit and learn from in the following pages.

Judith A. Langer
Director, CELA
January 2000

TEAMING TO TEACH ENGLISH TO INTERNATIONAL HIGH SCHOOL STUDENTS: A CASE STUDY

PAOLA R. BONISSONE

INTRODUCTION

International is not an ordinary high school. It is located in the basement of a large community college. Freeway exits, factory buildings, and a correctional facility surround the school in this nonresidential area of Manhattan. Its students come from all over the city, some commuting by train up to an hour each way. As they exit their trains at the run-down elevated station, these students head to one of the most extraordinary schools in New York State; they enter the large glass doors of LaGuardia Community College, trek down the stairs, pass the college bookstore and its student lounges, and eventually arrive at their school, where they are greeted by a bold sign, "International High School Students Are Going Places."

Not just anybody can attend this small alternative school (approximately 450 students). It was created by the Board of Education and the Board of Higher Education in 1985 to serve students who have been in the United States less than four years and who have scored below the 21st percentile on the Language Assessment Battery. In 1997-98, students represented 48 different countries and spoke 37 languages. The school's mission is to enable each student to develop the linguistic, cognitive, and cultural skills necessary for success in high school, college, and beyond. Students, who enter with a very limited use of English, quickly develop language skills and content understanding in this language-rich environment.

By the time students graduate, they will have participated in three nine-week internships; probably taken at least one college course; written countless essays, reports, stories, and letters; prepared many oral presentations; and presented a final graduation portfolio to a panel of teachers, students, and community representatives. This graduation portfolio will have to show that the student has met or exceeded all the content and skill requirements outlined in the state standards. Almost all of these graduates will be accepted at a college of their choice. In fact, in

the 1995-96 school year, 91.8% of International's graduates were accepted to colleges such as Columbia, Cornell, MIT, and various state universities and community colleges.

One of the unique aspects of International is that language development is a schoolwide goal. It is a primary element of the school's stated mission, and all the teachers – English, social studies, science, math, art – work toward this goal with an almost zealous fervor. Indeed, this case study, which has as its purpose to discuss exemplary English instruction, focuses on a team of three science/math/technology teachers – Aaron Listhaus, Allison McCluer, and Jennifer Schanke. As will be shown, these three teachers do an outstanding job teaching their students language skills while they are teaching them important science/math/technology content.

This case study is based on observations of these three teachers as they work with students in their classrooms and with each other and their colleagues in formal and informal meetings. It is also based on interviews, conversations, and email correspondence with the teachers, as well as on conversations with students and reviews of student work. All took place during the 1996-1997 school year.

The focus of this report is the teachers' professional networks and how these influence the students' acquisition of literacy skills, particularly writing.

THE INTERNATIONAL HIGH SCHOOL COMMUNITY

The 450 students who attend International are assigned to one of six interdisciplinary programs to study each year. Each program includes two themes, one for each semester. The six programs are:

1. "Motion" and "Visibility/Invisibility"
2. "American Dream" and "American Reality"
3. "It's Your World" and "Conflict and Resolution"
4. "Crime and Punishment" and "City Life"
5. "World of Money" and "World around Us"
6. "Origins" and "Structures"

Approximately 70 students enroll in each program. They are taught by an interdisciplinary team of five to seven humanities and science/math/technology teachers. These teachers meet regularly to plan, coordinate, and develop curriculum and assessment; they want their students to study the

same sub-topics at the same time in each of the academic disciplines. In class, students work in collaborative groups using teacher-written activity guides. These activity guides are used in place of textbooks to direct and assist students in their group exploration of the topic of study; for example, the guide may direct students to discuss issues raised by a novel they have read or to complete a biology experiment together. Students are assessed each semester through a portfolio review process.

International High School is a physically nested and philosophically contained community, constantly redefining itself and what it does. Its guiding and defining philosophical structure is the school's mission statement:

1. Limited English proficient students require the ability to understand, speak, read, and write English with near-native fluency to realize their full potential within an English-speaking society.
2. In an increasingly interdependent world, fluency in a language other than English must be viewed as a resource for the student, the school, and the society.
3. Language skills are most effectively learned in context and emerge most naturally in purposeful, language-rich, interdisciplinary study.
4. The most successful educational programs are those which emphasize high expectations coupled with effective support systems.
5. Individuals learn best from each other in heterogeneous, collaborative groupings.
6. The carefully planned use of multiple learning contexts in addition to the classroom (e.g., learning centers, career internship sites, field trips), facilitates language acquisition and content area mastery.
7. Career oriented internships facilitate language acquisition as well as contribute a significant service to the community.
8. The most effective instruction takes place when teachers actively participate in the school decision making process, including instructional program design, curriculum development, and materials selection.

The staff is committed to it, and it guides all the activity at International. Just as curriculum, instruction, and evaluation are constantly reworked by staff at International, so, too, is this mission statement reworked and modified each year. As a result, the school's environment promotes learning – for both students and staff. Sharing ideas, collaborating, and mentoring are the *modus operandi* in this non-hierarchical community.

Sharing Ideas

Sharing ideas about all aspects of schooling goes on continually at International. It is through sharing ideas that consensus is worked through, and consensus is the operating principle at International. For example, ideas about how to assess and graduate students via the portfolio process have been a part of the ongoing internal school discussions this year as the school prepares to graduate its seniors solely by portfolios for the first time this June (1997). Issues such as the "breadth and depth" of students' understanding have been discussed in letter exchanges and meetings as the staff has examined its portfolio process to make sure there is consistency within the school. At the team level, teachers are constantly sharing ideas with each other at their regular team meetings regarding team responsibilities such as budget, schedule, student management, assessment, and curriculum. Lishaus, Schanke, and McCluer teach the "Origins" and "Structures" program and in this report are referred to as the Origins Team.

Curricular ideas are shared among teachers within teams as they work continually to make connections across the disciplines. For example, when the students on the Origins Team were studying temples, they wrote about mythology in humanities while constructing three-dimensional temples using mathematical concepts learned in science classes.

Students, too, are constantly sharing ideas with each other as they work in small groups completing projects and answering questions on the activity guides. Content is shared across languages as students move from their native languages to English while completing the activity guides together.

Collaborating

At International work is done collaboratively by both teachers and students. Teachers work together within their teams developing and refining the activity guides. In addition, they work together on schoolwide issues through breakout teams at faculty forums and school committees. Issues regarding learning and schooling are always handled collaboratively.

International teachers also frequently write grant applications together. Such proposals are sometimes used to address common concerns such as the teaching of mathematics in interdisciplinary instruction. The Origins and Motion Teams together wrote a grant application

proposing that they look into their respective science activity guides as well as initiate cross team discussions about linking science/math/technology with humanities. Writing proposals helps put minds together to work on common issues and concerns both across teams and within teams.

Students work collaboratively as well. They usually complete their activity guides in small groups. In this way, students learn how to work and share in the production of a final piece of work. For example, groups of four Origins students each created a teenage human sexuality handbook; each group member was responsible for researching and producing one section. The group process is valued highly at International, and students are often asked to reflect on what it means to work in a group.

Mentoring

Mentoring is used to incorporate individuals into the International community; to assist individuals in the learning and assessment processes of the school; and to assist in the development of ideas. A new student is paired with a student of the same first language so that they can help each other using their native language. Newer students then indirectly become involved in the unique processes at International. In addition, teachers mentor seniors as they begin compiling their graduation portfolios for review. Students are also mentored when taking college courses while at International and are given credit for such work. Newer teachers are mentored by more veteran teachers as well. And all teachers are part of a "peer support team," a small group that includes both newer and older teachers and is designed to give feedback and support to group members. In addition, teams sometimes mentor each other. They share ideas in order to reflect on their practices and provide feedback (e.g., the Motion and Origins teams' proposal-writing work mentioned above).

The Origins Instructional Team

The Origins Team, one of the six interdisciplinary teams at International, has five members: two humanities teachers (language development and global studies) and three science/math/

technology teachers. In its work together, the team manifests the same spirit of idea-sharing, collaboration, and mentoring discussed above.

The team shares ideas about interdisciplinary connections between science/math/technology and humanities as they attempt to make connections across disciplines. For example, they planned to focus on autobiography in the humanities classes when the science classes were studying human sexuality.

The collaboration shown by the science/math/technology teachers extends to all facets of their teaching day. Alternating who starts the day is just one way that the instructors share their classroom responsibilities. Covering for each other is another way. If one of the instructors needs to attend a specific meeting with a student teacher or an outside specialist brought in to work with a particular student, coverage is worked out before hand or on the spot. In order to better understand the students and enable a better transition from one instructor to another, the three teachers overlap their instruction throughout the day. In addition, these teachers work collaboratively as they develop and refine the Origins activity guides during their weekly meetings.

Mentoring is another embedded practice of this team. Since one team member was new to the school this year, mentoring her into the team's portfolio assessment process in December was important. She was paired with an experienced team member during portfolio week as teachers worked in groups of two to assess students' portfolios.

The Origins Science/Math/Technology Team Members

The Origins science/math/technology team members are three uniquely creative individuals: Aaron Listhaus, Allison McCluer, and Jennifer Schanke.

Listhaus is an articulate, energetic man who has been at International High School for four years. Currently, he is an elected school leader carrying a one-third time teaching load alongside his administrative responsibilities. His educational background in theater, with a minor in secondary education and English, brought him to teaching for a brief time immediately after his undergraduate studies. He later returned to school to pursue a master's degree in teaching English as a Second Language (ESL), and he taught a variety of subjects and grade levels before joining International High School.

McCluer has taught at International for nine years. Before this, she taught psychology at LaGuardia Community College and another community college. Her undergraduate degrees are in psychology, biology, and chemistry, and she has a master's degree in psychology. Although McCluer had never worked with language minority students nor taught high school science classes prior to her work at International, she was closely mentored by a program instructor and developer when she joined the school. She sought his expertise and modeled her early classroom activities in biology in much the same way that he had created chemistry activities for his students, all hands on experiential learning activities. In her early years she became part of a peer support group that included this mentor.

Schanke's energy and openness are immediately noticeable. The newest member of the Origins Team, Schanke joined International High School this academic year after a teaching assignment in Brooklyn. Her undergraduate degree is in English language and literature. She taught English abroad for a brief period of time. Upon returning to the United States, she earned a master's degree in ESL before she began her teaching career here.

The Team's Concept of Learning

Listhaus says that the constant discussions and interactions within his community have forced him to be "very reflective" about what he does and why. With ease he articulates his beliefs about teaching and learning and what he considers to be important.

> I care that students learn how to learn. And I care that students are able to step back from their learning and assess what they've learned, how they have learned it, and what the significance of all those things is (Listhaus interview transcript).

This process of reflection is embedded within the school culture and is a crucial component of how students and teachers work and learn. Through mastery statements written at the end of each project, students tell what they have learned and connect that learning across disciplines. Curriculum changes are made based on teachers' and students' reflections. Proposal writing also forces teachers to examine their own practices and others', giving feedback for change.

Reflection is also very much a part of the evaluation process for both teachers and students. Teachers participate in "peer evaluation team" (PET) reviews in which teachers present portfolios and reflect on their performance. Students assess themselves and their learning in their

own portfolio review process each semester. Reflection and learning are intertwined for Listhaus, as they are intertwined in the school's culture.

> The ability to look critically at something, the ability to think for oneself, the ability to design and negotiate, to research and to sort of change and adjust your goals depending on what your resources are . . . all of the adult literacy behaviors that we value in this country are the things that I feel are my responsibility to teach in high school (Listhaus interview transcript).

For McCluer, an important aspect of reflection and learning occurs through dialog with students, often one-on-one, about their work.

> When we get projects, we attach notes or we write on them. . . . I think that with these students, and with high school students, it seems like giving them the verbal feedback standing there with the paper as I am talking about it, is most effective. I think that often times you can have notes all over their work but they don't quite understand what the notes mean. I think that these students partly don't understand because of their English. . . . So I think often times going over it with them and verbally explaining it to them, because when you are verbally explaining you are getting that feedback (McCluer interview transcript).

The newest member, Schanke, takes a more direct approach toward learning.

> There are certain skills that I really want the kids to leave the course with. I want them to know about scientific observation, and I want them to know about the scientific method and how to use it to approach problems. I want them to think about how they can use math as a tool to proving or disproving their hypotheses (Schanke interview transcript).

The Team's Concept of Assessment

Listhaus believes that assessment is an ongoing process, much like learning, and that it is not something tied to a one-time event.

> If you wait until the end of the term to assess your students you have missed the boat. There is no point in telling me what I did wrong when I no longer have the opportunity to rectify it. It is too late. . . . I used to give out projects and have these round table discussions two weeks before the projects were due. At the round table discussions students would be able to understand where they were in their research and where their understanding was failing. Then [they had] enough time to go back and rectify that situation before they turned in their research projects. That to me is a useful way to use assessment (Listhaus interview transcript).

These ideas guide Listhaus as he interacts with his team colleagues, his school peers, and his students.

Regarding assessment, McCluer feels that "a big part of it is feedback to the student so that the student knows or sees something about their intellectual growth" (McCluer interview transcript). She has been influenced by the portfolio process at International, and now uses portfolios in the classes she teaches at the community college.

Schanke describes what she and the other team members are looking for in students' portfolios:

> In the school we talk about graduation portfolios because we want our portfolio assessment each term to mirror what is going to happen in the graduation portfolio. I think it is a combination of seeing breadth as well as depth. I think that if you look at the questions that we choose for [students to address in their portfolios,] they are very broad, they are open to a lot of interpretation. What we are trying to do is get the kids to look at larger issues, or to look at the big picture but to be able to see how their specific experiences contribute to that. For example, one of the questions is about structures, "What are structures and what structures do you see with nature and everyday life that we have studied?" Almost every project that we have done you can relate to structures somehow. When we did the plant project they could talk about the structures of plant, they could talk about the functions and structures of the different parts of the plant. They could talk about the structure of the number system. What does a number system need to have to be practical? They did the body measurement project. What structures in the body are equal or have a relationship? What structures in the body have a relationship to each other? And certainly the architecture project. So we are trying to pull things together for them [so they can] see some of the connections. That's what I want. I want in their portfolios to see that they are making some of these bigger connections (Schanke interview transcript).

The Team's Concept of Instruction

Activity guides and small group work are the instructional core of Origins. Teachers introduce the activity guides to the class, motivating and directing the students, and then they let the students work together on the guides in small groups. The teachers circulate from group to group providing needed feedback on projects. Sometimes individual students seek the instructor's feedback. Occasionally Jennifer Schanke begins class with a five-minute, whole class lecture giving feedback about papers she has corrected. During that time she reviews concepts that the students seemed not to have understood and gives them the opportunity to correct and resubmit their work. Most often, feedback and instruction are given in small groups or one-on-one. This enables the teachers to direct their instruction to the specific needs and level of the individual or group.

NETWORKS FOR PROFESSIONAL GROWTH AND CHANGE

International High School gives its teachers room to develop professionally and intellectually by having everyone involved in all aspects of schooling. As Listhaus stated in his initial interview, "Because we are treated like professionals, we act like professionals." The common bond at International is a commitment to the school's mission statement. "You come to International because you want to teach," one teacher said. This love of teaching is particularly supported by internal structures that provide assistance to teachers in developing their craft.

Teachers and teams are constantly dialoguing about and reflecting on how and what they do. This provides the impetus for both professional and intellectual development and commitment. Because teachers are asked to be responsible for all aspects of their students' schooling as well as for the running of the school, their professional development is often a consequence of issues that they are addressing within the school. Their professionalism is intertwined with issues concerning: the most effective, meaningful way to teach content to linguistically and culturally diverse students, the curricular choices they make about what is important for students to learn, and the manner in which it is best for the students to learn and to be assessed.

Tapping Resources from Within: Internal Networks

Each of the three Origins teachers have developed networks that support their work on particular issues. Figures 1, 2, and 3 highlight their professional networks. Overall, the teachers' contacts revolve around two sources: the school and the team. The school is the teachers' resource for questions and answers as they ponder their practice, seek answers to questions, and eventually change what they do. Change is constant and often immediate. The networks in all three cases are rich in internal contacts. Through the networks we see professional questions (often questions regarding learning, instruction, and assessment) and how answers are found by working within the school community. By examining how these networks work, we see how professionalism is developed at International.

Aaron Listhaus: Focusing on Learning

Aaron Listhaus has both teaching and administrative responsibilities. As an elected "school leader," he spends much of his time working on schoolwide issues such as ensuring that the state standards are covered in the school's instructional offerings and appropriately assessed in the school's graduation by portfolio process. He says he is a "constructivist" and mentions how the student teachers from the New School for Social Research, who have come to International for several years, have been crucial in articulating ideas that he has always believed (Listhaus interview transcript). It is Listhaus' view of learning that shapes how he approaches what he does as a teacher and as a school leader (see Figure 1).

This past year Listhaus has been particularly concerned about how students express what they have learned. His concern arose during students' oral defenses of their portfolios and stems from the discrepancies he sees between knowledge, or lack of it, in relation to the activity guides used to instruct students.

> By constructivism, I mean that students create their own understanding of why things happen. Rather than explain to them Newton's Laws, why not give them the tools Newton used and ask them to discover the laws for themselves. That's constructivism, where students figure out for themselves what it all means.
>
> If you remember the students working on the golden mean during the architecture project, and the contest to figure out the ratio between width and depth in the making of the strongest beam, all that learning could have been accomplished by simply telling the students what the ratio was. Would they remember it? Would they have felt like they owned that knowledge? The problem with activity guides is that they pre-suppose where students will go, what they will need to learn, and what questions they will need to answer. They are no different than teaching from a textbook. The student does not own the process, and isn't really responsible for his learning. All the student has done is shown up, and answered the appropriate questions. What I am looking for is a way in which students can be supported in their own search for what they are interested in pursuing, the questions they wish to answer. In short, I think activity guides teach students to answer questions. What I think the teaching of science ought to be is teaching students to ask questions (Listhaus email 4/29/97).

In this email message Listhaus defines constructivism, explains how activity guides fall short according to his beliefs about learning, and suggests a possible remedy for these shortcomings. Because of this reflection, he wrote a proposal for the Origins and Motion teams to examine their science activity guides together.

> From the graduation portfolios I have seen and from the students I have mentored, I have noticed that students' portfolios are weak in the area of science. I have also been

> wondering about how good a job we do in exposing our students to the "wonder" of science and to scientific methodology. I have questions about whether students really understand and have internalized them. My biggest concern is about the efficacy of our activity guide (Cross team proposal, 3/16/97).

Here he ponders an important question about learning in relation to what he has seen as a professional member of his learning community. We witness his professional commitment to students' learning. He seeks his colleagues' experience and expertise to investigate and find answers with him to his observations and question. This collaborative process may eventually lead to curricular changes, but in the meantime it reinforces the community's culture of defining *their* issues and finding *their* answers among themselves. This activity causes reflection by having the instructors look at the activity guides. It may cause personal reflection among the participants on their own practices. The effect will probably be substantive. It may cause the activity guides to be changed. The assessment process may eventually go through some alteration because of this activity. Such efforts create professionalism as individuals examine and find solutions together for common answers to issues they all face. This example shows how activities in the school help teachers professionally ponder larger issues related to learning. It also demonstrates how teachers pursue answers for themselves that can in turn be tried out in the classroom. Learning is what Listhaus is focusing on. Instruction is never mentioned, but it may very well be restructured since the activity guides are at the heart of the debate.

Allison McCluer: Modeling

McCluer, another seasoned International teacher, has developed a series of networks that she has tapped in order to advance her instruction and her team's work (see Figure 2). Two important internal resources used at various stages of her life at International impacted her professional development in distinct ways. When she was new to International and to teaching high school, she sought internal expertise. By watching and talking with then veteran instructor Tony Brachman, she began modeling and receiving feedback on her instruction and curricula. It was through what she saw in Brachman's classes that she began developing her own activity guides for the Origins Team. The second major influence on her professional development was a writing workshop given last year by a teacher from the Motion Team, Marsha Slater. (Another case study in this series focuses on Slater. [See p. 37 for a list]). That workshop helped McCluer

focus on writing as a tool. She now articulates how students on her team are asked to construct their ideas via essays that can be put together into a larger piece of writing. In both instances, she tapped "experts" within the school community in order to advance her own practice. In so doing she advanced her professionalism by developing her craft within the intellectual and philosophical boundaries of her immediate community.

Jennifer Schanke: Entry into the Professional Community

As the new teacher on the team, Schanke's internal networks are more recent and therefore demonstrate how entry into International's professional life happens. Her internal networks have centered on curriculum, e.g., developing activity guides (see Figure 3). She has been initiated into the process of creating curriculum, a critical part of International's professional life, by developing new curriculum with McCluer for the nutrition activity guides and during the architects-in-residence program when the students studied Greek and Roman structures. She became interested in expanding this curriculum by "doing more with Gothic cathedrals," since the students had studied the Middle Ages in their humanities classes. Therefore, she applied for a National Endowment for the Humanities (NEH) summer grant "in order to link the history/ theology and technology used to build these cathedrals" so as to build a strong interdisciplinary curriculum for the team (Schanke email 3/7/97). Unfortunately, her proposal was not accepted.

Schanke's involvement in a cross-team grant application with Marsha Slater has forced her to think about instruction from various perspectives, e.g., outcomes and how they are articulated via the portfolio process. Discussions with team member Aaron Listhaus have caused her to think about larger issues such as constructivism and how to bring more of a constructivist approach to the activity guides.

All three of these teachers' professional networks lie primarily within the confines of International High School. Because of this interconnected, supportive environment, individuals develop professionally within its borders. Elaborate networks that have developed within the community, particularly through the grant-writing process, allow for a variety of resources to be tapped as ideas are brought back to the teams for the students' benefit. It is crucial to note that all three teachers were given the reins to pursue ideas. By seeking answers to questions about their own practices, they develop as the thinkers and doers of their profession and developers of their

own professionalism. Individuals develop intellectually and professionally while indirectly advancing the team's purpose and ultimately affecting the students' learning.

Professionalism at Work: External Networks

The external networks of the three instructors were less developed than the internal networks. Professional networks outside of the school environment served two functions: directly, to contribute ideas and practices with others, and indirectly, as a source for furthering ideas that had begun simmering internally. All three teachers brought ideas back to the team.

Aaron Listhaus's contacts outside of school remain mostly within the confines of his supervisory capacity of New School student teachers. He supervises these student teachers outside of International in addition to having two student teachers doing their practicums within the Origins Team. These outside professional contacts are an extension of his instructional/learning beliefs and values. For example, in a post observation letter to student teachers (2/28/97), he writes:

> I am glad to have had the opportunity to sit in on *reaction journal discussion* groups today. Taking time to get in touch with students, to ask them to reflect on the events of the past week and to write their reaction to something is an incredible idea. It communicates to your students that reflection is important and that hearing what they are thinking is valuable.

Through the dialoguing and interactions with the student teachers from the New School, he is constantly working on his constructivist ideas – articulating them and attempting to put them into practice in another arena. There is a direct link between his own practice and his discussions with these new practitioners. His supervisory role gives him the opportunity to indirectly reflect on his own practices in the classroom, refueling his professional and intellectual growth.

Allison McCluer's outside professional contacts work in much the same way. They feed ideas back into what she does at International. Outside of school, she continues to pursue her Ph.D. in psychology. She's at the final stages: ready to defend her dissertation. From that she brings various ideas back to her team and her school community. First, her work with Jerome Bruner was instrumental in developing her understandings about how language is learned.

> I worked for a number of years with Jerry Bruner and I think that really gave me a perspective on how it is that people learn – it's not to have somebody stand at a blackboard and write information up there and the person memorizes it. It is much more of an interactive, playful approach to the acquisition of knowledge. I think that has probably been most influential in terms of the way in which I approach the classroom (McCluer interview transcript).

In addition, she believes that her study of Vygotsky's theory of the zones of proximal development (zopeds) has been crucial to her own understanding of learning and teaching:

> I have been much more strongly influenced by the Vygotskian model of the zones of proximal development and the notion of scaffolding. Bruner talks about it in terms of the child's language acquisition process, where the parents gradually up the ante in terms of their expectation, accepting initially any sound that the child makes as communicative and then gradually asking for closer and closer approximations to actual words (McCluer interview transcript).

McCluer believes that these ideas guide her work at International, in particular, the way she interacts with her students as together they explore their understanding of biology. In the classroom she always waits for the students to approach her with their work, allowing their questions to direct the response she will give (field notes 5/5-8/97).

Her psychology background has influenced her teaching, providing her with the understanding of how learning takes place. Pursuing her advanced degrees has given her an expertise, which is tapped by the school. For example, she has been instrumental in developing a guidance counseling group for Origin students, and she continues to mentor students each year. She also mentors a peer evaluation team. Her developmental psychology training and expertise is used in all these activities and serves as an indirect link between her professional outside involvement in pursuing her intellectual interests (via a doctoral degree) and the professional internal activities in which she is involved.

As the new person on the team, Jennifer Schanke is well on her way to making links between her internal and external professional life. Figure 3 shows that most of her external involvements occurred prior to her joining International. The one exception is the NEH grant that she applied for after reading a newspaper article. She pursued that grant after her experience writing the new curriculum involving the architects-in-residence program. This stimulated her thinking and desire to pursue some ideas further.

LEARNING ENGLISH IN THE INTERNATIONAL CULTURE

International High School has a writing culture. Writing is essential to how teachers and students work, learn, and evaluate themselves and one another. The purpose of this section is to look closely at how English is experienced in the Origins' classrooms. Yet to understand how English is learned in these classrooms, one must understand the extent to which writing is embedded in the culture and valued throughout the school, by the teachers and among the students.

Origins Team Students

The 72 Origins Team students are divided into three groups. Each of these groups spends two 70-minute periods each day with the science/math/technology teachers. Unlike most of the International interdisciplinary teams, which include internships as part of the program, Origins does not offer an internship, and as a result is mostly comprised of ninth and tenth graders. (Before graduating from International, students must complete three nine-week internships.) Eight Origins students[1] consented to take part in this case study and so answered specific questions and allowed for their work to be reviewed during the year. All of the participating students are girls and are in their first or second year at International. Four are Spanish speakers from various parts of the Spanish speaking world (Dominican Republic, Mexico, and Peru) and the other four are from Bangladesh, Pakistan, Romania, and China.

When asked on a questionnaire what they do most in school to help them learn English, they wrote a variety of responses, including:

Tushi Mou:	The main thing to learn English is talk with my other friends in English. Second thing is when I write English to use my own sentences.
Cristina Tipa:	Communicate to people. Work on projects, learn new words, vocabulary etc. Express my ideas when I work in a group try to make the others to understand what I'm trying to say.
Rubia Joli:	Basically what I do is to talk in English with my friends and read books also in the those books that are easy to study and give knowledge to us.

Alicia Perez: I like to see movies about the projects that we have to do because listening to the words, we can learn the pronunciation. I also like to read books from the library. With the books we see new words and when we don't know them we can check in the dictionary and learn new words. I also like to talk with other people that don't speak my language so that I can practice English.

When these students were asked what they thought they needed to learn in English, they wrote:

Rubia Joli:	I think that first of all what I need to learn in English is tenses and new vocabulary that improves my English
Shantaal Rodriguez:	I need to read more books at home more. Have more conversations with people who speak very good English so that they can correct the wrong things that I say.
Cristina Tipa:	Everything. Grammar, vocabulary, etc. I want to improve my English very much in order to speak coursive(?) English with no mistakes.
Amy Lee:	Communication. Writing and reading is necessary. Talking.

Schoolwide Writing

Figure 4 illustrates how the writing culture manifests itself throughout International. Since writing is such an important tool here, its value is indirectly transmitted to those who are a part of the community. At the school level, writing is used in a host of ways, including developing activity guides and publishing information about school operations in personnel procedures, handbooks for peer-selection, support, and evaluation. School initiatives often produce documents of one sort or another. Ongoing discussions about the year-long schedule have produced assorted written initiatives for discussion at faculty forums. While one could say that any school produces countless documents, few produce their own guidelines, their own procedures, and their own curricula to the extent that International does. Writing is an integral way in which ideas based on the principles of the school's mission are disseminated. Writing is also the way the school seeks answers to issues that it is facing. Writing is how learning is assessed. In short, writing is essential, critical, and an integral part of this learning environment.

Teachers' Writing

Teachers are involved in a variety of writing activities (see Figure 4). They develop and write activity guides. They constantly give students written feedback on all written work. They write self-evaluations in their PET portfolios, explaining their yearly accomplishments and setting professional goals for the following year. Writing is also used to communicate important ideas among team members. For example, Jennifer Schanke wrote a letter to her team members expressing her ideas about working with them, as well as concerns and issues that she believed needed to be addressed in the future. Listhaus also used letters to colleagues as one way to share his ideas and concerns about portfolios.

Student Writing

Students learn science and math through written English. This written English indirectly teaches students writing and language skills such as vocabulary development, grammar, and writing in different genres. Reflection, too, occurs through writing. Students reflect on what they have learned and then write mastery statements and letters home at the end of each semester. Within the Origins science/math/technology classes, writing is the principal way ideas are shared, expanded, and learned. All activities revolve around the written activity guides created by the instructors. Students write everything from sentences to longer pieces. Short paragraphs are often used to explain what they have done, while essays are often used to express what they have learned. Schanke expressed the importance of writing in Origins and at International in the following manner:

> One of the reasons that we're having kids do so much writing is that there is a schoolwide concern that we really use writing in the mathematics and science classroom. The other is that we can see what ideas the students really comprehend and where they are faltering.
>
> Allison and I are giving the kids a lot of feedback – hopefully, this will improve their writing over time. All of the pieces of writing that they are doing right now will eventually come together into a larger work. The kids will be using the feedback they get from us on the individual pieces to put together a cohesive, well-written essay as part of their final project on genetics (email 4/15/97).

Listhaus feels that writing gives students the opportunity to think about what they want to say; writing gives them time to collect their thoughts. At the same time, writing is also a way to check students' comprehension.

> The other day I noticed that students didn't really understand how to figure out probability. So after I explained it to them, I asked them to explain it to me in writing so I could see who really got it and who didn't. If students didn't get it, I could see where they went astray in their understanding (email 4/2/97).

McCluer also believes writing is a way to check students' comprehension and help the teacher understand what needs further attention.

> Putting things into writing helps students to really understand what they are learning. To put something down on paper you need to really know what you're talking about. Betty [a Motion Team science/math teacher] says that she feels that students take more responsibility for their learning when they need to write about it. They ask many more questions. It may be that it helps them realize what it is that they're not clear about. It certainly helps you the teacher to see what they're having difficulty with (email 5/1/97).

The students, as well as the teachers, believe that everything they do in the Origins science/ math/technology classes helps them with English and in particular with writing. For example, in a student debriefing session (5/8/97), Iris Alvarez and Melanie Gonzalez said:

> We learned new words and read books. This helps our writing because we use the same words, more difficult words. We write in our own words, like a summary. It helps us with our grammar.

And Rubia Joli said:

> All the work is done in writing. I just read and then I write. When I read I understand most of the things. What I do not understand I look up in the dictionary and sometimes ask someone. Writing every day helps your writing. We write a lot.

Direct and Indirect Learning

Through writing assignments focused on science concepts , students indirectly acquire English – new vocabulary, grammar, and experience in writing various types of genres. Science content is directly learned via experimentation, observation, and by answering questions about

the activity. Writing development and genre writing is indirectly learned through the endless types of writing assignments students complete. Through writing, students reflect on themselves, their learning, and the connections among disciplines. Their language develops as ideas move from sentences to paragraphs to essays. They learn how to put ideas together, how to construct cohesive paragraphs into extended reports, as they write about the content they have been interacting with during the activities and tasks.

Writing for Content Learning

Students learn content via experimentation, observation, and questions. For example in the fall, they planted seeds in different types of soil and wrote short descriptive passages about the plants' growth. Rubia Joli describes her work on this project:

> There were a lot of questions, and I had to give answers. I went to the libraries and read books and talked to people to get information to do my project. No one helped me. My project was a plant experiment but my plants didn't grow. I put a lot of water so they didn't grow because the water made the soil liquid. Every day we had to write data about what we did. We had to explain everything that we did. I wrote that my plants didn't grow. I made pictures of their growth for each day. I got an A on the project. My teacher said that my project was very unique. No one else did what I did. This was the first project I did this year. I worked hard and did my best (student debriefing transcript, 5/8/97).

Cristina Tipa learned about genetics during the spring unit. She says the following about how the genetics activities helped her put ideas into practice and articulates how it also helped her with her English language skills:

> I didn't study this before. But now I learned because I read about it, and I read lots of books. I didn't know how to put it in my own words, so I had to read more and more for my ideas. I think it's a good project because I wrote a lot, about everything that I read. I did a lot of work on it. This helped me with my English because I read a lot of books. I couldn't find some words my language so I had to look in the English dictionary to see the definition. When I do that, I see the definition and I just know the meaning. It helps me with my writing the way I wrote it. I had to put things in my own words. That was very hard, because I didn't know how to explain it. But the thing, like I said before, by reading books, and by just looking at them, you just have the idea and you just put things down. It helps your writing by learning new words and by writing more and more (student debriefing transcript, 5/7/97).

Students write paragraphs to record conclusions about their experiments or explain relationships between concepts such as ratio, proportion, and scale. Students also learn how to

apply new knowledge in activity-based tasks and then write about what they have learned while reflecting on being part of a group. Sometimes they produce a written product, as in the case of the human sexuality handbook for teenagers. In addition, students do analysis through comparative writing.

Teacher Feedback to Students

Written Feedback

Written feedback is at the core of how these teachers interact with their students and often occurs while the work is in progress. Comments range from queries about content to specific grammatical points. An examination of the written comments on students' work revealed the following patterns (see Table 1).

Teachers made very few comments about language. When these were included they were often about spelling or organization. A question often posed (especially to new students) was "Are these your words?" The authenticity of student writing was a common concern and point of discussion among Origins teachers.

Comments on content were almost always posed in the form of a question, usually to try to get the student to ponder, reflect, and reconsider what they had written. More often than not, the underlying intention seems to be to direct the student to add further details and extend the written explanation.

With every piece of work, general, broad comments along with a letter grade are always given – first a positive comment about the piece itself, followed by ways that the work can be improved. The door is always left open for the student to return to the work and improve it.

Students also provide final feedback to other students' work via peer evaluation forms. These are more of a reading guide as students are asked to read at least two portfolios during assessment time and make comments about them to their peers.

Oral Feedback

The three Origins science/math/technology teachers do not teach through whole-class lectures. No transmission teaching is done. Instead, students are asked to rely on each other as they work through their activity guides. Sometimes teachers circulate, giving feedback to written work in progress. Instructors also provide feedback when requested by students. Students often seek out the instructors when they want feedback on a piece of writing. As an example, the excerpt below shows how Jennifer Schanke gives one-on-one feedback to a student who brought an essay to her for her comments. The assignment was to choose an extinct or endangered animal seen during the recent field trip to the natural history museum. Students were asked to research the animal and write a one-page typed report that included: a description of the animal and its environment, an explanation of what changed to make the animal extinct or endangered, and a map showing the animal's environment. The dialogue below is characteristic of the type of feedback given to students during the day of observation (5/7/97).

Teacher: Do you have this on disc?

Student: No

Teacher: That's why you need it on a disc – to make corrections (correcting paper) Dangerous. It is not dangerous unless you attack it. (continues reading) What does it stand up on?

Student: Leg

Teacher: . . . Okay. I want to know where it lives? (teacher continues to read paper) Lives in what?

Student: Central, central Africa, the Congo

Teacher: You saw the movies, huh? You saw that in the movies (as she reads)

Student: uh huh

Teacher: (continues reading) I think you should talk more specifically about the mountain gorilla that's endangered. (flips through *The Endangered Species Book* [purchased during the field trip in both Spanish and English versions]) Okay, that's it. (gives it to student) Do you want to borrow this? Instead of talking about the gorillas that live in the forest you should talk about those that live in the mountain area. Those are endangered.

Student: Okay.

(Student returns to table with paper and text. Twelve students writing and reading at the tables; 10 students have checked out to the computer room)

Here the instructor is providing very specific content help to the student regarding his essay. Comments direct the student toward expanding his ideas and writing, much in the way written feedback is given, as noted above. The instructor also assists the student in using classroom resources such as *The Endangered Species Book.*

Sometimes the teachers give feedback to the whole class based on patterns noted in the students' writing. During the genetics unit, students' written essays showed that they didn't understand phenotypes and genotypes. A class review was done based on the general content issues that were noted in the essays. Afterwards, students were given the opportunity to address written comments and concerns that had specifically been given on their papers.

Mini-lessons and "Teachable Moments"

Students often receive feedback in mini-lessons, or what are often referred to as "teachable moments." Listhaus says the following about teachable moments:

> It depends on the moment. Sometimes a critical mass of students need to know the same thing at the same time. Then, I would do an impromptu mini lesson on a particular topic. For example, the other day we were using a textbook and I asked students to find a particular topic in the book. I soon realized that many did not know how to use the table of contents and the chapter headings. So I took a moment to discuss that with them and then moved on to the subject at hand. It doesn't always take an oral form. . . . You might say that in group work and in the support they give to each other, students primarily use teachable moments in deciding what and how to help each other (email 4/2/97).

The following example of a teachable moment shows Jennifer Schanke interacting with a student at the front table in the classroom. Six students are seated at the table. Each one is writing quietly. Jennifer approaches the table and a male student hands her his work. She reads his essay out loud, correcting the words.

Teacher: And they must be what? (She looks up and says to the student) That is the genotype? Now tell me in your own words what is a phenotype.

(Looks at student who tries to explain)

Teacher: This is a genotype. That comes from the parents. So what is the phenotype? Right, it is what you can see.

(continues correcting and reading)

Teacher: Genotype. Remember you were supposed to take some of what you did in that other essay and put it here.

(continues writing)

Teacher:	(reads out loud) The hair color . . . that should be a new paragraph (reads) They inherited two. (continues to read. stops and says) good. So what else do you need to say?
Student:	(inaudible)
Teacher:	Let's get in . . . since you say dominant here, what does dominant mean?
Student:	(inaudible)
Teacher:	How would you complete this sentence (writes and reads), "the dominant gene is . . ." What is another way to say more powerful?
Student:	(inaudible)
Teacher:	How many dominant genes do I need in a genotype to see that trait? One, two, three (writes) We say a recessive gene is . . . How many recessive genes do we need?
Student:	Two
Teacher:	Two (writes and says out loud) we need two recessive . . . (says to student): Instead of making this one, you make this two sentences. Where do we get an allo . . . this one big B is an allo, Where do we get it? (writes for student)
Student:	And use the word inherited or inheritance
(silence)	
Teacher	How about (writes) This is how . . . Right? Here you have an essay (gets up & leaves) (fieldnotes, 5/6/97)

In this encounter the instructor has worked on content all the while helping the student construct an essay. Although the students are studying in science and math, they are also learning language, English in action.

Writing in Different Genres

Origins students utilize a variety of writing genres, including letters, essays (descriptive and analytic), reports, and reflections. With each semester's portfolio, students are required to write a letter to their parents or guardians about what they have learned during the semester. The letter is written in English, then translated into the native language by the student before being mailed home. Students wrote reports throughout the year, which helped prepare them to write the reports required for their semester portfolios and final graduation portfolios. For example, students wrote a multi-part report describing what they had learned from the plant project. The reports included an introduction, a description of the experiment, drawings, a table, and a conclusion.

The dominant type of writing in the science/math/technology component of Origins is essay writing. Sometimes the descriptions are written in the form of observational logs, focusing on details that the student has observed with conclusions that can be drawn from those observations. Other times the essays are scientific descriptions, as in the example of the extinct or endangered animals report noted earlier. Students write essays to convey information that they have learned, report findings, and analyze something they have studied.

Students practiced descriptive writing in an imaginative piece that they wrote collaboratively in small groups while studying habitats. Imagination and scientific understanding blended together in the essays these students wrote about imaginary animals and their habitats. The students also created a three-dimensional habitat to show where and how these animals lived.

Through writing, students practice English, new vocabulary, new structures, and new ways of expressing ideas. One project involved analytic writing. They studied nutrition and their own cultural eating habits. After learning about the nutritional pyramid and doing a host of other food related tasks, the students were asked to research foods that are in a healthy diet. They kept a food diary and then compared their diets with an ideal one, analyzing the differences in essays.

In the process of carrying out experiments, students learn how to report findings of their work, sometimes using short descriptive paragraphs and other times, graphs and charts. Guided and unguided essay writing are included in all of the activity guides, which provide students with writing scaffolds. These "scaffolds" are eventually removed as students become more adept at free writing and at constructing their meanings.

An important component of all writing done at International is reflective writing. With reflective writing students think and express what they have learned. Students wrote essays about the following questions for their spring portfolios.

1. What is the scientific method: How have we used it to solve problems this year? How have we used mathematics in this process?
2. The theme of our instructional program is made up of three components Origins, Growth, and Structures. Choose one of these components and write an essay describing how it relates to what you have learned this year.
3. In this class you have had many opportunities to observe and describe natural phenomena in a scientific way. Write an essay explaining the process of scientific observation. Include how mathematics can be used in this process.
4. This year we studied the mathematical concept of slope and the coordinate plane (graphing) when we studied plant growth. We studied ratio and proportion when we studied architecture. We studied probability when we studied genetics. Choose one of these topics in math and science and write an essay about how they relate to each other and to other topics (Origins spring portfolio guidelines, 1997).

At International, writing is viewed as a way to construct understanding and develop language. Writing is considered important, and students are encouraged to use it to explain their thoughts and what they have learned. Newer students are included in writing activities – their abilities scaffolded by writing guides and peer and teacher help. Yet activities are not watered down for them, nor are they expected to perform something different from the rest of their peers. Newer students are expected to perform to their ability, and they meet the challenge. In other places, nonnative students often do less writing than their native peers because their oral language skills may not be as proficient as what is perceived to be necessary in order to write. This is not the case in International's writing culture, where everyone is viewed as a writer, and no one is deprived of this essential learning tool.

LINKS BETWEEN TEACHERS' PROFESSIONAL EXPERIENCES AND THE WAY ENGLISH IS TAUGHT IN THEIR CLASSES

The learning community at International develops teachers and students alike. It taps resources from within, helping teachers and students maximize their growth through collaborative networks in which ideas are shared and worked through together for the growth and progress of the community. On the micro level, the Origins science/math/technology team shows how the teachers' networks at International are tapped and how ideas are brought back to the team, worked with by its members, and then understood by the students as they learn content and English through an activity-driven curriculum that emphasizes writing as it main learning tool.

Each Origins team member brings an important and special aspect of their professional expertise, involvement, and understanding to their team and their classroom (as highlighted in Figure 5).

Aaron Listhaus, through his contacts with the New School and ongoing discussions with individuals about constructivism, is constantly grounding the activities of the team into larger learning issues. He forces individuals around him to look at the big picture. He makes individuals stop and reflect on what they are asking of the students. By trying to closely examine students' learning from the activity guides, he forces everyone to indirectly reexamine teaching and assessment.

Allison McCluer, as the most seasoned Origins member and the science specialist, offers an

array of important links between the teams' activities, its content, and her doctoral studies. She continues to rework the curriculum, which she has been involved with for the last nine years. Her psychological studies and her research with Bruner have made her focus on zones of proximal development and the importance of providing proper help when the student requests it. The in-house writing workshop she attended given by Marsha Slater has made her focus on writing and its importance for learning. She focuses on the kinds of help instructors should provide to students in the classroom.

Jennifer Schanke, the self-proclaimed generalist of the group, brings important qualities to her team. Because she has focused on science/math/technology instruction for nonnative students and has a strong humanities background, she can easily make connections among disciplines. She also brings an expertise in working with language minority students that is evident in her interaction patterns in the classroom. Her ability to understand students' meanings while guiding them through the activity of writing is evident in the classroom examples cited. Her comfort in working one-on-one or in small groups is evident, too, and crucial in allowing students to make sense of the content.

Final Remarks

The International environment places a premium on writing. While literacy learning appears to be a secondary concern, it really fuels everything and is at the heart of how activities are constructed and done.

While specific content knowledge seems less important than general understandings and links among disciplines, students are asked to demonstrate content knowledge by applying their ideas and through writing assignments. Seeking and making connections among the disciplines is highly valued, as evidenced by placing nonspecialized teachers in highly specialized content areas (as in the case of Jennifer Schanke); in the attempt of the Origins Team to be consistently interdisciplinary; and in the kinds of "big picture" essay questions asked of students in their semester portfolios. Reflecting on one's learning is also considered important for both students and teachers. Indeed, this reflection is an important link in generating and redefining this learning culture.

Writing is crucial to success and survival in this culture. Critical thinking seems tied to the

written word rather than to oral discourse and interaction.

Collaborative work is essential for both teachers and students. Individual and group efforts are supported, encouraged, and assessed. Individual competitiveness is minimized, while individual teacher expertise is tapped for the benefit of all community members.

Learning is ongoing. Everyone is constantly remaking themselves and what they do. Students are always working and reworking their ideas through writing. Teachers are constantly reworking what they do through the constant reevaluating of the activity guides, instruction, and assessment (all of which are intertwined).

At International nothing is static. Everything is constantly being rethought, reworked, and redone – from writing assignments to the mission statement to the portfolio assessments. Here, the *process* is valued as much as the completed, finalized product. International truly is a learning community.

ENDNOTE

[1] Although all other names in this case study are real, the student names are pseudonyms.

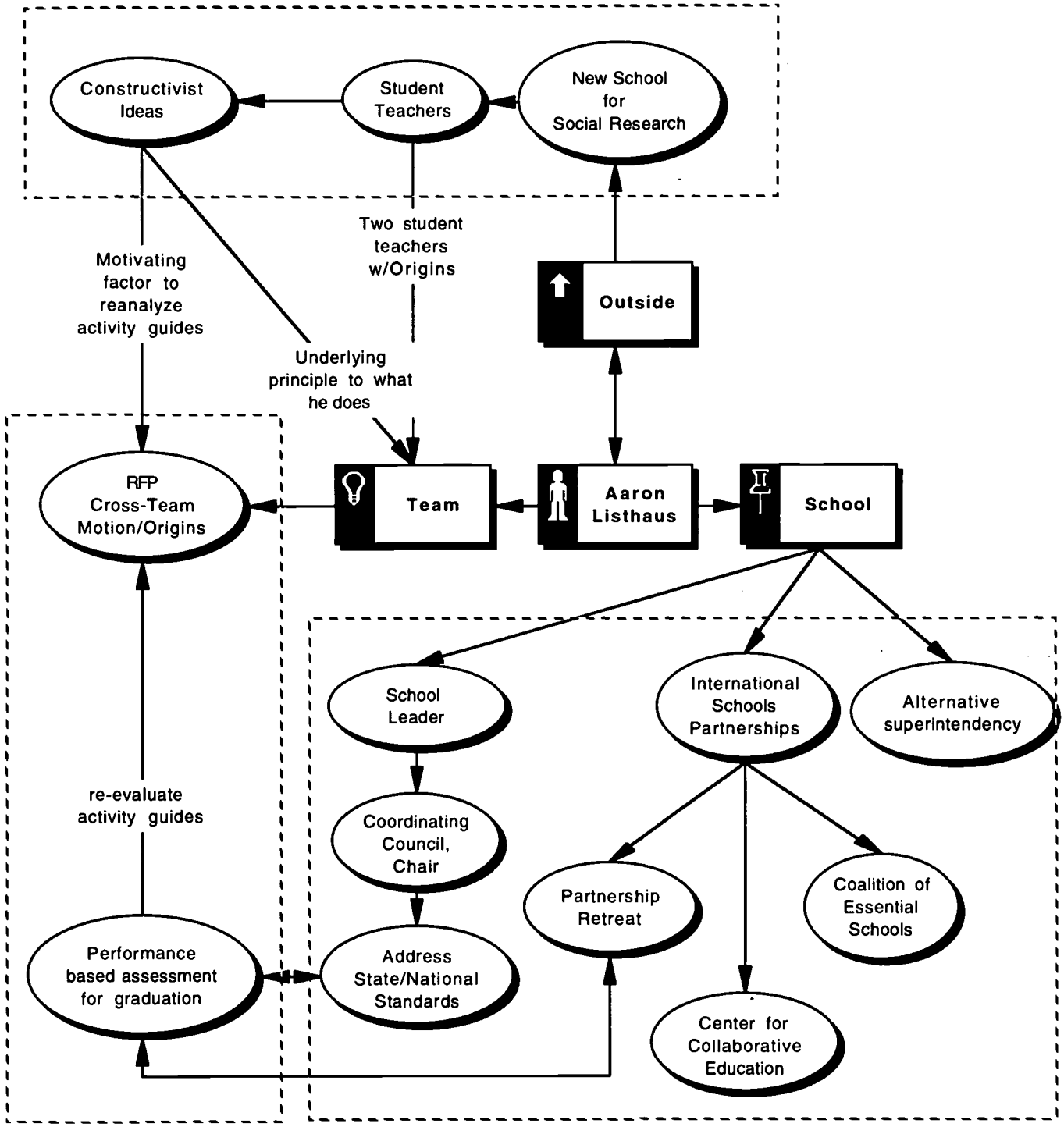

Figure 1: Aaron Listhaus' Professional Networks

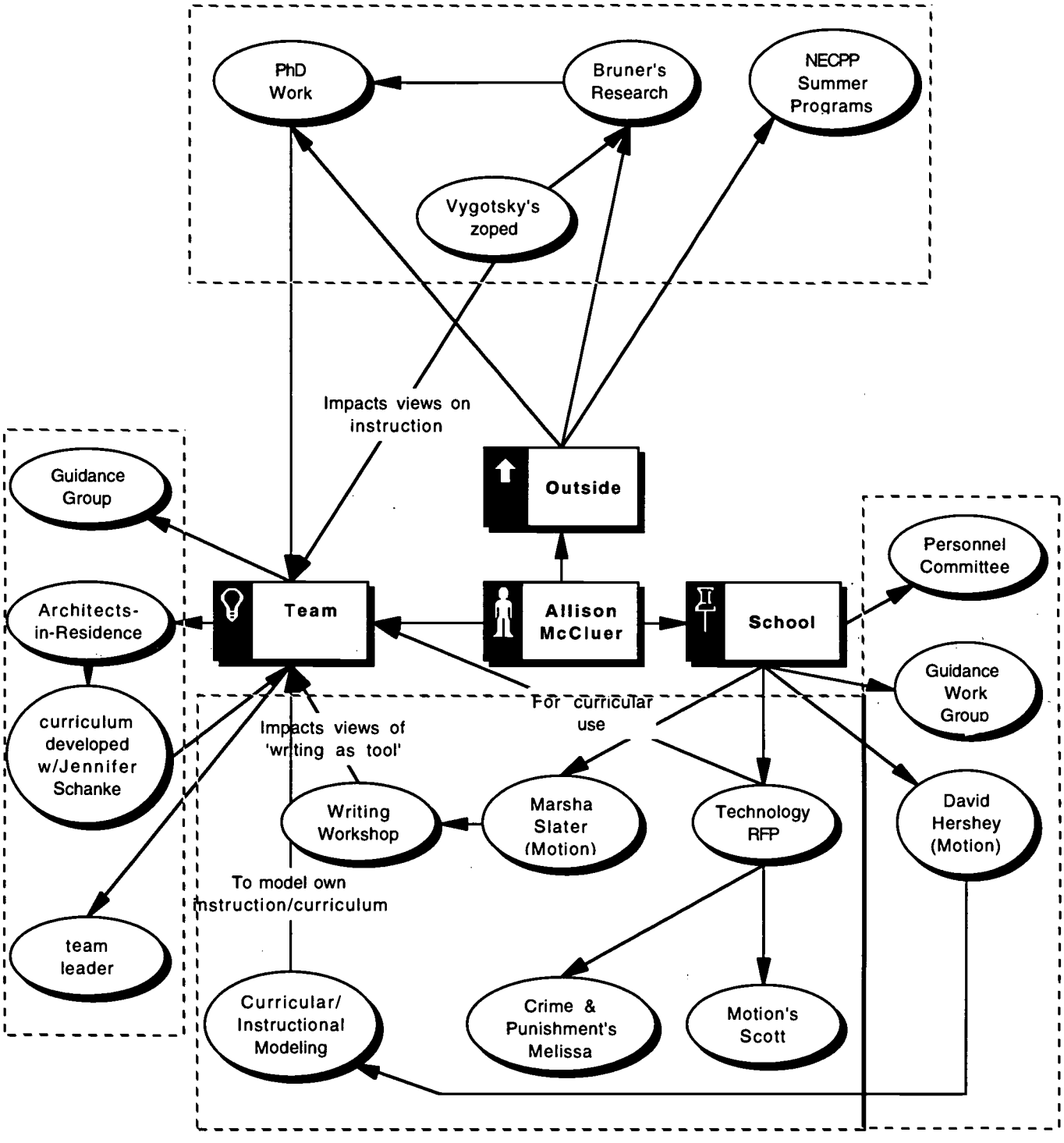

Figure 2: Allison McCluer's Professional Networks

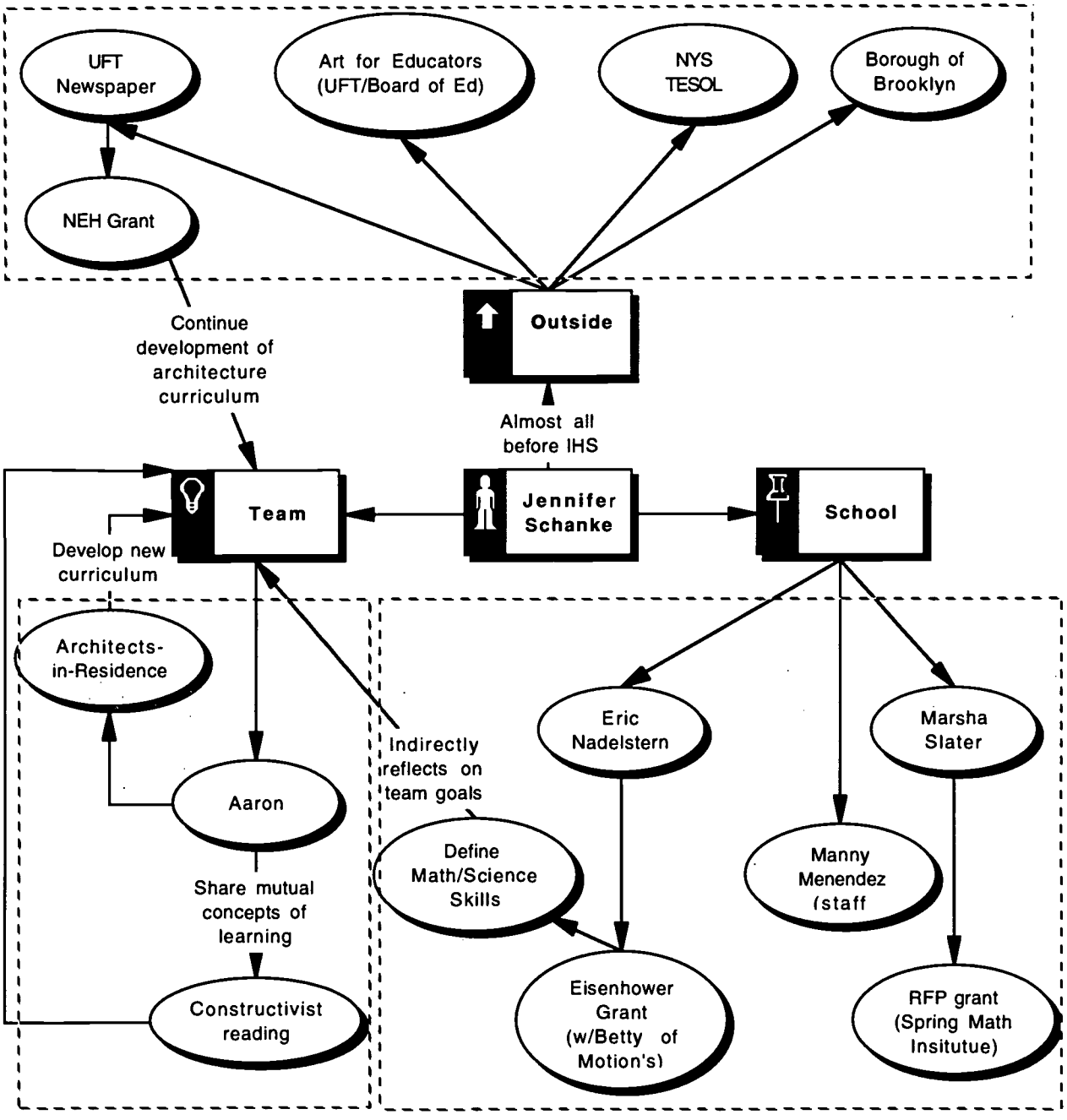

Figure 3: Jennifer Schanke's Professional Networks

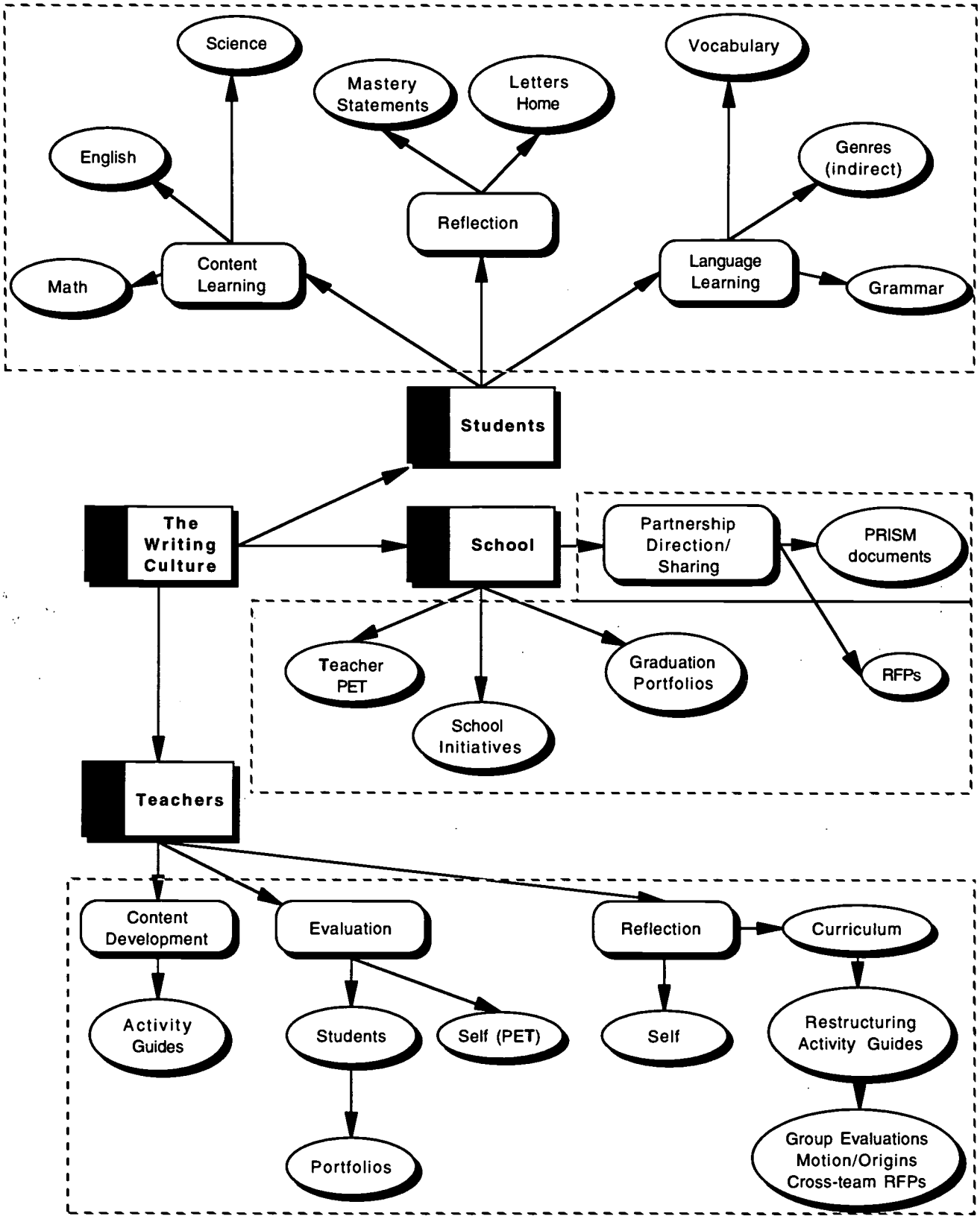

Figure 4: The Writing Culture

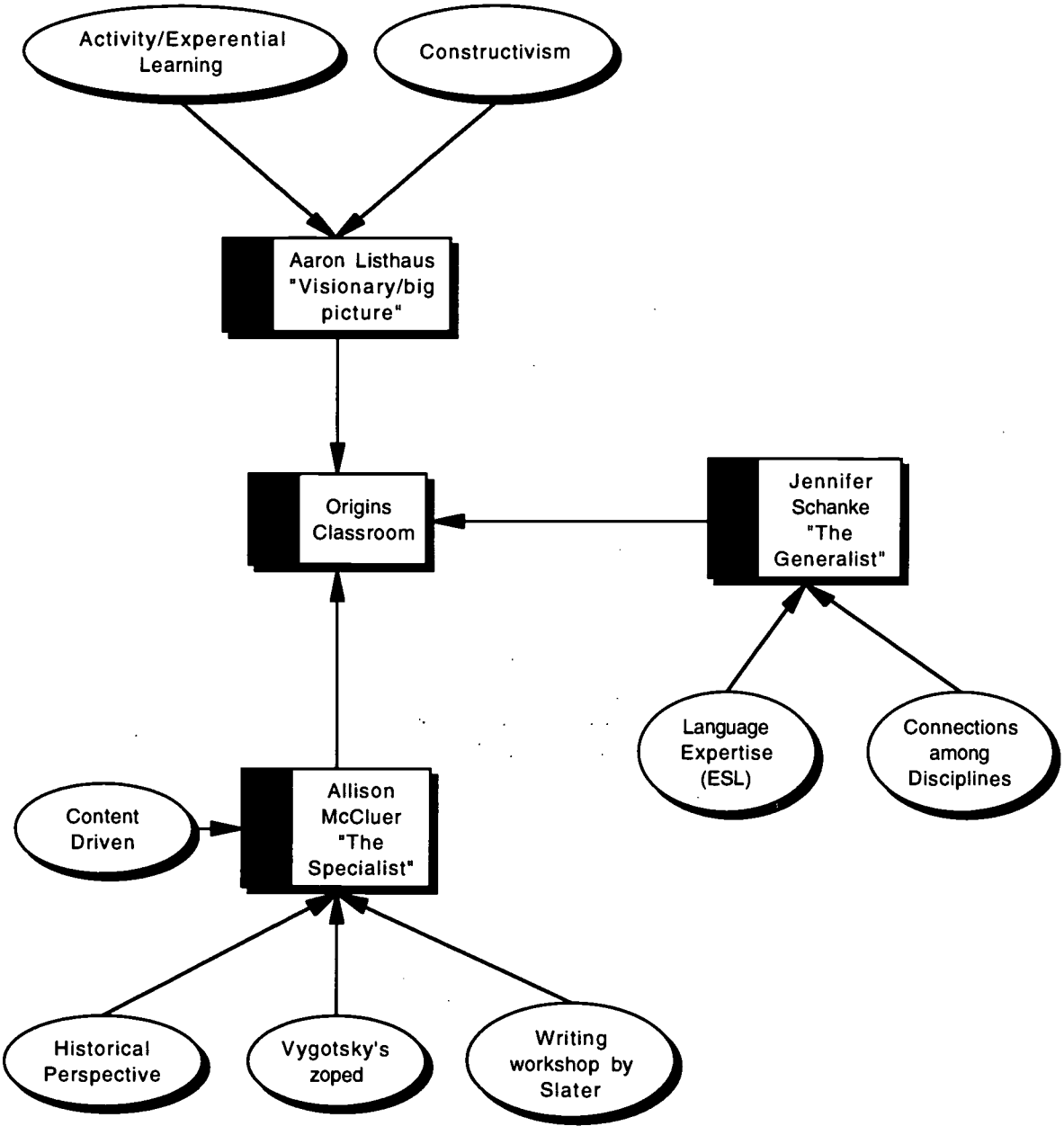

Figure 5: Web of Knowledge/Expertise Brought Back to the Classroom

WRITTEN COMMENTS BY INSTRUCTORS		
Language	**Content**	**General Comments**
Are these your words? Spelling corrections Organizational comments (numbering order of paragraphs) You need to reorganize this a little bit Long sentence	Is this true? Why did you include information about James Flamingo? Is it necessary? These are recessive How? How does probability help us to make genetic predictions? You are repeating this idea What do these numbers mean? Can you explain dominant and recessive in more detail? This is not a prediction	When you are writing a scientific description, be sure to include details. I like the way you used your own words in this paper. Think about the organization of your summary. Very nice work! You need to explain the difference between dominant and recessive. The first paragraph is really good. I think you could actually split it into two. There are a few unanswered questions though...and your final paragraph doesn't really explain how probability theory can be used to make predictions. The information in your booklet is good. There are pieces of information that are missing. In addition to answering the questions, you need to give all of the information about each topic. I also noticed a lot of spelling mistakes. It's important to use spell check. You can learn the spellings of words this way.

Table 1: Written Comments by Instructors

RELATED REPORTS AND CASE STUDIES FROM THE EXCELLENCE IN ENGLISH RESEARCH PROJECT

12002 *Excellence in English in Middle and High School: How Teachers' Professional Lives Support Student Achievement.* Judith A. Langer.

12014 *Beating the Odds: Teaching Middle and High School Students to Read and Write Well.* Judith A. Langer.

The following site-specific case studies profile teachers, teams of teachers, and central office administrators. These and others will be available beginning in spring 1999.

12003 *Interactions between Central Office Language Arts Administrators and Exemplary English Teachers, and the Impact on Student Performance.* Carla Confer.

12004 *Beating the Odds Over Time: One District's Perspective.* Sallie Snyder.

12005 *A Middle School Teacher Never Stops Learning: The Case of Cathy Starr.* Eija Rougle.

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2. Clarity

	Very well				Not at all	
a. The concepts in this report were clearly expressed.	1	2	3	4	5	N/A
b. This report was well organized.	1	2	3	4	5	N/A

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a. Reading this report gave me new information or insight into teaching or learning.	1	2	3	4	5	N/A
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4. Any other comments or suggestions regarding this report or additional research needs in the area of English and language arts teaching and learning are greatly appreciated.

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