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Unrolling Roles in Techno-Pedagogy: Toward New Forms of Collaboration in Traditional College Settings

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Unrolling Roles in Techno-Pedagogy: Toward Collaboration among Faculty, Students, Librarians, and Information Technologists in Traditional College Settings

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> "For years the librarian was the portal to information; now the computer is the portal. Librarians need to find ways to help people discriminate between the sources of information and find the best ways to search." - Librarian
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> "As a student. . . I am usually encouraged to give feedback about what's working [in a class] and what isn't and to develop ideas about what would work better, not to participate directly in making changes." - Student
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> "Are we the sage on the stage? Or are we in some sense facilitators? Are we in fact not all that different from our students except that maybe we're a couple of years older and we've done these things?" - Professor
>
> "[I am] an evangelist…a planner and navigational designer…a graphic designer…a project coordinator…a trainer." - Information Technologist

These four players in higher education are in the process of unrolling their institutional roles.[1] Three of those roles — librarian, student, and professor — have been, historically, fairly scripted. Their parameters reflect the well-established divisions and hierarchies that structure the

[1] All anonymous quotations in this article are drawn from various forums in "Talking toward Techno-Pedagogy: A Collaboration across Colleges and Constituencies." XX College, May, 2000.

production and reproduction of knowledge in traditional college settings. Among these divisions and hierarchies is the designation of different degrees of power and prestige and of different kinds of educational responsibility among members of the academic community. According to these, a professor constructs and disseminates knowledge in a particular field, a librarian organizes and guides people to and through that knowledge, and a student absorbs and reproduces that knowledge. The quotations above show people in these three roles wavering between such traditionally scripted expectations and new pressures and possibilities.

The advent of information technology and the attendant creation of a role to help implement it have thrown into relief the inadequacy of the established script. Information technologists occupy "amorphous roles" (IT Person, Final Feedback Form), transported as they have been into the educational from the technical realm, and members of educational communities for only the last ten or twenty years at most. Unfettered by historical models or precedents, information technologists, like the one quoted above, can conceptualize their roles as more multi-faceted and complex — coordinator, designer, evangelist.

This addition of the information technologist to the cast in higher education raises a number of basic questions regarding the roles and relationships enacted by members of those academic communities:

- Who has what roles in teaching and learning at the college?
- What is the nature of interactions among those in old and new roles in that educational context?
- How can we revise our understanding of role, moving from a notion of something prescribed and fixed to something more complex and responsive?

Poststructuralism and constructivism offer two useful analytical frameworks for addressing these questions within a standard college context.[2] Examining, clarifying, and perhaps complicating long-held assumptions about roles in teaching and learning in this context is not only a matter of re-scripting individuals' and constituencies' responsibilities; it is a matter of rethinking education in theory and in practice.

How Roles Are Rolled — and Unrolled — in Theory

The common conception of "role" is a part, a function, a prescribed piece in a performance, or the expected behavior or participation in a social interaction. In a dramatic work, roles are constructs meant to represent essential qualities of people, and the different characters in a play throw into relief, through contrast and juxtaposition, the different qualities each represents. Unless the purpose of the play is to disrupt our assumptions about role, a character in one role in a play does not take the lines or take on the behaviors of another character. In general, a dramatic production is convincing and compelling in proportion to how well the characters enact their prescribed parts.

Sociologists apply this concept to daily social interactions. A role is "a collection of expectations that others have for a person occupying a particular status" (Anderson and Taylor, 2000, p. 120), with status understood to be an established position in a social structure that carries with it a particular social value (Anderson and Taylor, 2000, p. 119). "'Role' connotes a set of rights and duties as defined and sanctioned by the system in which the person acts" (Skidmore, 1975, p. 12). In addition, "role implies the existence of other roles that have bearing on each other" (Skidmore, 1975, p. 21).

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[2] I address these questions in reference to professors, librarians, students, and information technologists working within conventional college facilities. I do not discuss distance learning or other educational models that have emerged as a result of expanding information technologies.

Both in dramatic performances and in social realities, people occupying different roles are ascribed different degrees and kinds of power. These power dynamics affect interactions and people's sense of themselves, which are closely intertwined. They influence people's thinking about what they are responsible for, what is possible for them, and what is not. In a traditional college setting, participation is often scripted according to these definitions and assumptions; players in such an academic scene tend to have clearly delineated impressions of what is theirs to speak to or act upon in relation to others. Job descriptions, histories and precedents, and both explicit and tacit assumptions about roles can lead those who embody them to experience not only a "role" but also a "roll" — the root of the words is the same — something wrapped around itself. Cast in a particular position, members of an academic community enact what they understand to be their prescribed parts.

The clear parameters that roles offer simplify relationships and interactions; knowing "where one stands" — on the stage, in a social scene, or in the academy — makes performance more straightforward. Yet clear prescriptions can also be stifling; they can limit both possible and actual interactions. Whether comfortably simplifying or uncomfortably stifling, if viewed critically, a role's assumed parameters can invite unrolling. The constant reinterpretations of roles in drama and the shifts in acceptable social categories and dynamics over time illustrate this phenomenon. In the educational realm, poststructuralism and constructivism both critique and provide alternatives to essentialized notions of role.

Contextualizing and complicating concepts of identity and relationship, which inform notions of role, poststructuralists see identity as "a starting point — not an ending point…a vehicle for multiplying and making more complex" people's identities and relationships (Ellsworth, 1992, p. 113). Rather than striving to fix and formulate roles and relationships, we

can embrace the very “slipperiness of identity” as a “powerful means through which we can 'denaturalize' ourselves and embrace change” (Orner, 1992, p. 75).

Like poststructuralist theory, a constructivist model of education calls into question traditional roles. In contrast to the delivery or banking model of education (Freire, 1990), constructivism is not premised on professors depositing information in students' minds but rather on students and professors co-constructing knowledge together. In this model, roles, responsibilities, and relationships begin to blur: instructors and students become both teachers and learners. Discussing constructivism in particular relation to new technologies, Resnick (1996) argues for what he calls “distributed constructionism.” Building on research in “distributed cognition” (Salomon, 1994) and “knowledge-building communities” (Scardamalia and Bereiter, 1991), Resnick asserts that knowledge-building communities, such as a college, evolve particularly effectively through collaborative activities that include not just the exchange of information but the co-construction and design of something meaningful to participants. In such a model, the goal is not for participants to assume clearly defined and separate roles but rather to re-imagine generative ways to co-construct knowledge.

These two theories can help us unroll roles — unwrap the traditionally prescribed parameters of participation in educational theory and practice. Poststructuralist theories challenge us to understand identities as inherently multiple, complex, and shifting rather than fixed in relation to a self, to historical precedents, or to others. Constructivism, generally conceived of in terms of interactions between teachers and students within the arena of individual classrooms, can move us beyond that conception. Other players, such as information technologists and librarians, can participate in the co-construction of knowledge within classrooms, and knowledge can also be co-constructed in collaborations among these players outside the classroom. The advent of information technologies provides us with an unprecedented opportunity to re-vision

identities and relationships and to expand the pedagogical sphere in higher education because it calls into question everyone's interpretation of their own and others' roles.

How Roles Are Rolled in Practice

The well-established script in traditional college contexts casts the professor as "the sage on the stage." This model assumes that knowledge is passed on or handed down from one generation to the next, with control safely in the hands of the experts, the professors (Bates, 2000). The sage-on-the-stage model is a legacy from the days when the college or university was "a microcosm, a miniature world offering the whole of knowledge in a restricted arena" (O'Donnell, 1996, p. 49). Within each discipline, the professor was the supreme local authority on the subject — the expert to whom a student was apprenticed. But, O'Donnell argues, in an information-rich world, "the real role of the professor…will be not to provide information but to guide and encourage students wading through deep waters of the information flood. Professors in this environment will thrive as mentors" (O'Donnell, 1996, p. 49).

These metaphors — mentor, sage-on-the-stage, facilitator — reflect educators' ways of defining or re-defining their role and, in turn, selecting their pedagogical approaches. Like many of the metaphors that can be found in the teacher education literature, however — such as the teacher as executive, therapist, and liberationist (Fenstermacher and Soltis, 1992) or the teacher as coach, general contractor, or custodian (Ladson-Billings, 1994) — these metaphors offer fixed roles that educators can assume (X, in press). Metaphors such as these may be useful to trigger a rethinking of one's role, but they can also contribute to re-rolling — wrapping too tightly — the role of teacher.

The same constructivist approaches to teaching and learning that unroll the traditional roles of teacher and student in the classroom widen the spotlight to encircle students as active players in their learning. This is particularly important with developments in information technology because students often have more knowledge about and greater facility with technology than the faculty teaching them. Explorations of the intersection of new information

technologies and pedagogy that focus not on what faculty members know and do but rather on the effect they have on students correct "the habit of looking at teaching without reference to the learning that ensues" (Miller, 1997, p. 4).

Yet when faculty come to the intersection of new information technologies and pedagogy, their first reaction is often simply to transfer all aspects of their instruction to the new medium without considering whether their role and pedagogical approaches need to be revised (Levin, Levin, and Waddoups, 1999, p. 256). One student articulates his sense of this dilemma:

> I've had professors that did everything in PowerPoint and I slept through the whole class. Then I'd have professors that have strictly lectured and it was the best class I'd ever had. So it's all about teaching style and you have to learn what works best for each student involved. But technology is not necessarily the greatest thing on earth (Student Participant, Day 2, morning).

Kent and McNergney (1999) support this student's perspective, arguing that both people and the objectives of teaching and learning are too different "to permit the application of an all-purpose, general effects model of teaching with technology" (p. 34).

A professor's impulse to transfer all aspects of her instruction to the new medium without re-examining her pedagogical approaches is a failure to recognize that neither she nor any of her students occupies a single, monolithic role in relation to technology or to one another. Such an approach can simply reinscribe the contours of the traditional role of professor — as dispenser of knowledge — as well as other narrowly conceived roles. Professors who focus on simply transferring their instruction into a new technological medium may assume that the role of the information technologist is to help them to translate, in the most literal sense, the content being taught and that the role of the student is to absorb that content. This literal translation approach does not take into account that not only must the professor and student role be re-imagined, the

role of librarian must be as well, given the changes in sources of information and modes of information gathering.

There is no doubt that we must consider how to respond to recent advances in technology and the imperative both to use them in teaching and to prepare students for an increasingly technological world. But to avoid re-wrapping roles that are already too-tightly rolled, we need to pose questions that widen not narrow our interpretations of the identities and responsibilities of those who participate in teaching and learning at the college level. As critics point out, decisions about integrating technology into teaching must not be simply in the service of the technological enterprise (Noble, 1998, p. 267) or because it is "the thing to do" (Provenzo, Brett, and McCloskey, 1999, p. 13). Rather, decisions about integrating technology into teaching must be "embedded in and subordinate to educational goals" (Bates, 2000, p. 34). There are drawbacks as well as benefits to integrating technology into teaching (Miller, Martineau, and Clark, 2000), and as Apple (1998) puts it, the machine should fit the educational needs of the teacher, the students, and the community, not the other way around (p. 332).

As the members of college communities highest on the hierarchy and with the primary, or at least official, responsibility in the pedagogical realm, professors take the lead in reconceptualizing their roles and pedagogical approaches. How can faculty unroll their roles, learn to make their instruction "de-centered" — not focused solely on them in their role as conveyor of all knowledge (Bateson and Bass, 1996) or on how they can control the knowledge construction in their classrooms? Professors need not, and generally cannot, effect a transformation of their roles on their own. Indeed, the most effective pedagogical transformations — and attendant improvements in student learning — have been born of collaborative endeavors.

Beginning to Unroll Roles — in Theory

Those who have used the advent of information technology as an opportunity to re-imagine teaching and learning have found that teamwork is essential to the reconceptualization of roles and pedagogical approaches. Not simply the "let's all work together" notion of teamwork, but rather a true integration of resources and roles (Eisenberg and Lowe, 1999). At all levels of education — including middle school (see Johnson, Linnenbrink, and Mitchell, 1999), high school (see Batz and Rosenberg, 1999), and college (see Rockman, 2000) — researchers and practitioners have found that thoughtful collaboration is the key.

"True integration" does not mean a seamless folding into one another — a blurring of roles and a pooling of resources — but rather a deliberate "multiplying and making more complex" of people's identities and relationships (Ellsworth, 1992, p. 113). Forming a team out of individuals who have traditionally been assigned different degrees of power in the educational hierarchy and who claim different kinds of expertise necessitates rethinking the authority ascribed to or associated with each member of the team. In other words, such a reconceptualization of roles requires that members of the team must give up some of their former authority (Tompkins, Perry, and Lippincott, 1998, p. 7) or claim authority where they previously felt or were perceived to have none. In addition, collaborators must move away from what Lippincott (1998) calls a contractual relationship, wherein one party states its goals and provides resources to a second party that provides the needed service, such as the example of the professor having the information technologist translate her content into a new medium.

Furthermore, working together successfully, Lippincott argues, means embracing a collaborative relationship, wherein the partners have mutual goals for the project, and each party brings skills and resources to the endeavor (1998, p. 83). A successful collaboration is marked by the "gradual development of a mutual understanding of the group initiative" and "respect [for] the expertise that each member [brings] to the project" (Tompkins, Perry, and Lippincott, 1998,

p. 7). Finally, collaborators must be willing to engage in the risk-taking associated with teamwork: trying out, reviewing, and sharing new strategies in public (Donham, 1999, p. 21).

Adjusting to these requirements for successful collaboration means that faculty must not only rethink their roles but rethink the roles of other members of the team as well. According to the traditional script, pedagogy is the purview of faculty. Faced with the specter of increasingly complex technological options, however, it is not such an imaginative leap to seek out an information technologist as a member of a planning and implementation team, although the temptation to re-enact the contractual relationship rather than construct the collaborative relationship persists. It is more of a leap to remember and rethink the librarian's potential role. The wide-spread lack of teacher awareness of the instructional role of librarians (Johnson, Linnenbrink, and Mitchell, 1999) contributes to the common phenomenon of librarians being neither considered nor included as integral to the pedagogical planning process (Heller-Ross, 1996).

If information technologists are included in the pedagogical planning process only out of necessity and librarians only as an afterthought, students are rarely included at all. This omission is characteristic of educational reform at all levels, and it is related to assumptions about who has what role in teaching and learning. Students are not generally considered authorities on educational theory and practice (X and Shultz, forthcoming, and X and Shultz, under review); their identities and responsibilities are relegated to narrowly conceived definitions of learner. Although critics have noted the absence of student perspectives on K-12 schooling and school reform and argued for attending to what students have to say for close to ten years (Phelan, Davidson and Cao, 1992; Connell, 1994; Corbett and Wilson, 1995; Nieto, 1994; Erickson and Shultz, 1992; Kozol, 1991), there has been little change in perceptions or in practice. Large scale surveys of student opinions (e.g., Metropolitan Life, 1996) and intensive, interpretive

studies of smaller groups of students in specific schools (X, under review; Phelan, Davidson and Yu, 1998; Oldfather, 1995) offer glimpses into student perspectives. But occasional pollings of students and scattered studies are not enough (X and Shultz, forthcoming; Weston, 1997). Particularly if, as many educators argue, our efforts to revise pedagogical approaches should be focused on student learning (Bates, 2000; Levin, Levin, and Waddoups, 1999; Miller, 1997), it is essential that we question and revise common constructions of students' identities and responsibilities as participants in ongoing conversations about educational reform. Tompkins, Perry, and Lippincott (1998) recognize this necessity and. moving beyond eliciting student perspectives on professor's uses of technology (Angulo and Bruce, 1999), they include students as active collaborators in revising teaching and learning with technology.

Like any profound pedagogical change, the successful and lasting integration of technology into teaching requires challenging many deeply held beliefs, changing long-established practices, and encouraging new ways of thinking in an institution (Bates, 2000, p. 42-43). Given the range of expectations and contexts for which the pros of integrating technology must outweigh the cons (Johnson, 2000), what do those involved in higher education need to "reinvent ourselves as a dynamic, flexible team" (Eisenberg and Lowe, 1999, p. 19) with newly conceptualized roles and as participants in newly configured relationships? And how might not only teaching and learning experiences but also scholarship benefit from such reconceptualizations? In the following section I present one approach to facilitating the development of such teams and the necessary accompanying revision of the roles of professor, librarian, student and information technologist.

"Talking Toward Techno-Pedagogy": One Team Approach

Aiming to design a workshop through which professors, students, librarians, and information technologists could explore their roles and how to work together to integrate

technology into teaching and learning, three colleagues and I designed and co-facilitated a workshop in the Spring of 2000 called "Talking toward Techno-Pedagogy: A Collaboration across Colleges and Constituencies."[3] The four-day workshop supported nine teams, each composed of a faculty member in the social sciences, a rising junior in the social sciences, a librarian whose area of expertise is the social sciences, and an information technologist.[4] Issuing from Amherst, Bryn Mawr, Hampshire, Haverford, Mt. Holyoke, Smith, Swarthmore, and Vassar Colleges and the University of Massachusetts, participants spent four days together planning how they would collaborate to explore the possibilities for revising one of the professor's courses through or with technology. Our emphasis in the invitation to participate in the workshop and in our facilitation over the course of the week was that each of the four members of the team had expertise and a legitimate perspective in this collaboration and that by talking together they could begin to break down some of the divisions and hierarchies that structure teaching and learning in traditional college settings.

Participants' responses to a Needs Analysis Form completed prior to their arrival at the workshop highlighted three themes that shaped the unfolding of the collaborations. The first theme was a desire for more and better communication — within courses, across intercampus contexts and among constituencies — and specifically, in striving to establish more and better communication, how to make good use of technology and to compensate for some of the ways

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[3] Hosted by XX College, this workshop was supported by a grant from the Mellon Foundation and was co-facilitated by Elliott Shore, The Constance A. Jones Director of Libraries and Professor of History at XX College, Susan Perry, College Librarian, Director of Library Information and Technology Service at Mount Holyoke College, Sandra Lawrence, Professor of Education and Chair of the Psychology and Education Department at Mt. Holyoke College, and me, Director of the XX Education Program and Assistant Professor of Education at XX College. We also had the invaluable assistance and participation of three student interms, Diana Applegate, Aliya Curmally, and Nancy Strippel, and an anthropologist, Jonathan Church, who documented the workshop.

[4] Support from the Mellon Foundation will allow us to sponsor two subsequent workshops focused on the humanities and the natural sciences, respectively.

technology can diminish communication. The second theme was a need to clarify attitudes toward and understanding of technology. Participants posed questions such as the following: Do we let technology overshadow content? supplement or illustrate content? What are the benefits and drawbacks for students of certain kinds of technological innovations? and, How do we develop a discriminating attitude toward technology? And the third theme included variations on the question of how to shift and redefine roles in response to the advent of new technologies.

The focus of some of these themes was sharpened during the first evening of the workshop, when participants posed questions such as the following:

- How does the role of librarian need to change given the rapid and profound changes in storage and retrieval of information?
- Who has the authority to make suggestions to professors regarding the appropriate use of new technologies in their teaching?
- Should an instructional technologist do the technology work for faculty and students or teach it to them so that they can do it themselves?
- Given that they are often more facile with using new technologies, what role should students play in integrating those technologies into the classroom?

These themes and questions were explored in a variety of forums over the course of the four-day workshop. Small, constituency-based, breakout groups offered participants an opportunity talk across colleges with people who share their institutional role. Presentations and small group discussions with six experts from a range of educational contexts (e.g., small liberal arts colleges, large state universities, distance learning programs) who were not members of any of the eight teams but who had extensive experience with exploring teaching and learning with technology gave participants insights into and inspiration about working collaboratively to integrate technology into teaching. Formal, whole group discussions and informal conversations

at lunch and dinner gave participants an opportunity to discuss themes and issues that arose. College-based breakout groups gave teams an opportunity to practice and plan their collaboration. Through each of these forums each team developed a draft of a proposal for their continued collaboration at their respective colleges.

The themes and questions that recurred were certainly shaped in part by the configuration of the workshop — which brought constituencies with different prescribed roles into conversation about those roles — and by the questions we posed to participants prior to their arrival. Yet team members' willingness to embrace the challenge — or the risk, depending on how wedded one is to fixed notions of institutional identity and relationship — of examining, clarifying, and complicating their roles could not have been forced. And the ways that participants addressed the themes and questions, their willingness to explore the "slipperiness of identity," was quite striking given that many of them issued from educational contexts that discourage such attempts to complicate identities and relationships. Faculty members were challenged not only to share their syllabi with other faculty as well as with people from different college-based constituencies, they were challenged to rework that syllabus through collaboration. Librarians and information technologists were challenged to participate actively in the redesign of a course syllabus rather than simply to offer support once it was completed, if at all. And students were challenged to be active contributors to the redesign of a course rather than recipients of the professor's labor.

Participants' engagement and risk-taking was facilitated as well by the presence of an anthropologist throughout the four days. We invited his participation because we knew we would not be able both to facilitate and to critically observe the workshop, and we wanted someone to chart its unfolding. His primary responsibility was to document the proceedings for the benefit of the workshop participants — to capture and reflect back to them what they said and did — so

that, in turn, we as facilitators could revise the workshop, both as it unfolded and in its future iterations. In this sense he also helped to complicate our roles as facilitators, interrupting the notion of conference planners as omnipotent.

Participants commented that the presence of the anthropologist made them take themselves and the workshop activities more seriously. His careful observation and insightful documentation legitimated their work, made tangible the sense of community that developed — within college groups, between members of like constituencies, and among all participants — and eased the sense of disorientation that attends a critical examination of one's identity and professional responsibilities. His perspectives, offered over the course of the workshop and subsequent to it, substantiated and extended interpretations of the workshop experience offered both by participants and by facilitators.

Beginning to Unroll Roles — Theory into Practice

As progressive educators have told us for years, learning and change happen when people experience the right combination of what is familiar and comfortable and what is new and challenging. Within the space of four short days, it was important that people not have to bridge too many differences as they strove to explore and perhaps redefine their roles and to find ways to collaborate in their newly configured constellations. The fact that participants had in common their focus within the social sciences ensured that to some extent they spoke the same language. In addition, this workshop had in common with other successful workshops a number of qualities that contributed to productive exploration, learning, and change. The first was the creation of a time/place out of time/place — a liminal space (Turner, 1980) — within which to explore what people currently experience and believe and what is possible in terms of their own and others' roles. The second was the assembly within that liminal space of people who have been assigned different roles in the world of higher education. And third was the expectation and requirement that people assembled talk and listen to one another.

Professors, students, librarians, and information technologists came to "Talking toward Techno-Pedagogy" in their institutionally defined roles but did not have to enact them in their usual, home context. They came together out of place and out of time and inhabited for four days a kind of non-place/time in which they had the opportunity to deliberately and consciously consider and imagine complicating their respective roles. Such a liminal space "is an in-between place which bridges the indicative (what is) and the subjunctive (what can or will be)" (Turner, 1980, p. 159). In such a space, "the cognitive schemata that give sense and order to everyday life no longer apply but are, as it were, suspended" (p. 161). As one workshop participant put it, having a "total immersion experience separate from home environment" gave people the opportunity to move "beyond the constraints of our organizational structure" (IT, Final Feedback,

May 25, 2000). And as one workshop facilitator mused, “people will come and participate and take risks in a 'virtual reality' that they wouldn't take in the real world, but then get enough confidence to take the risk in the actual reality” (Facilitators' Debriefing, May 25, 2000).

The delineation of roles prescribed and reinforced by institutions of higher learning often serves to separate the people assigned to those different roles and does not recognize their multiple identities. These delineations also promote and help to maintain lack of communication across constituencies. One of our goals in designing “Talking toward Techno-Pedagogy” was to bring together people who are separated from one another in and by their institutions and encourage them to talk across and perhaps complicate those boundaries. With the explicit challenge to explore possibilities for collaboration among constituencies, people “that I have never seen on campus” could begin to talk (Librarian, Final Feedback Form), thus bridging and beginning to break down the barriers too-clear delineations of roles and responsibilities can create.

In contrast to most conferences, which people attend as individuals or with others in similar roles, “Talking toward Techno-Pedagogy” was premised on, required, and anticipated cross-constituency, collaborative effort. Rarely if ever are professors, students, librarians, and information technologists brought together and invited to engage in a conversation in which all are considered equal contributors. Standing “on equal footing,” as one student participant described it, challenged them to engage in a different kind of conversation, highlighted the different kinds of expertise and questions they have respectively and that they share, and facilitated their re-imagining how they might redefine who they are and what they do.

One aspect of “Talking toward Techno-Pedagogy” that distinguished it from other workshops was the positioning of students as equal partners in the collaboration. As the student quoted at the beginning of this discussion emphasized, students are not generally invited to

participate directly in making changes in professors' courses. As in other contexts in which I have included students as authorities (see X in press, and X, under review), in this case including students proved to be one of the most powerful catalysts for all participants to question and begin to revise their roles. Part of the reason for their powerful effect is precisely that they are not generally invited to participate in such collaborative endeavors; they are generally designated the recipients and not the generators of knowledge. As Oldfather (1995) points out, "learning from student voices…requires major shifts…in ways of thinking and feeling about the issues of knowledge, language, power, and self" (p. 87).

Those participants in "Talking toward Techno-Pedagogy" who directly addressed their assumptions and initial revisions of their own and others' roles offered a variety of insights on this process. Neither linear nor continuous, the unrolling of roles in which participants engaged manifested itself in moments of reflection offered throughout the workshop. Three such moments were: when participants clarified their understanding of their own or others' roles; when they began to imagine and pursue different possibilities for their roles and relationships; and when they began to question their assumptions about and enactments of particular roles, to see points of connection, overlaps, and gaps.

Getting Clarity Regarding Roles

According to one instructional technologist, "[i]t was useful to have concentrated time to think through different people's roles" (Final Feedback Form). Similarly, one librarian felt that one of the most useful aspects of the workshop was "the recognition that emerged in the minds of different groups about what it is that the others do and what they have to offer each other" (Feedback, Day 3). A student concurred: "We have a much better understanding in my group of the roles each person in the group and of the value of collaboration" (Final Feedback Form). This clarification entailed perceiving the delineations of roles but it also included rethinking some of

those delineations as “myths and stereotypes were broken down” (Librarian, Final Feedback Form). Through “challenging assumptions and preconceptions of my work within education and changing views of my own work” one librarian' explains that she “actually came to value my work more” (Final Feedback Form). Through realizing what others could contribute to his pedagogical efforts, one professor was grateful to realize “all of these wonderful ideas can come to fruition without me doing and being everything” (Final Feedback Form). Through both clarifying what they believe to be true and clarifying what isn't true and what is possible, participants began to unroll their roles.

Moving Beyond Prescriptions

One librarian explained that, regarding her sense of librarians' participation in the workshop, “We moved from roles of reactivity to proactivity” (Final Feedback). Such a movement reflects a revision both of the librarian's sense of herself and of her relationships to others. Taking a proactive stance also leads to questions such as this from an instructional technologist: “How can I access the student voice in planning?” (Final Feedback). This isn't simply a question about how to elicit a different perspective; it has profound implications in terms of the instructional technologist's perception of student identity; it helps redefine the student not merely as a recipient of knowledge but as a co-constructor of knowledge. This redefinition of the student role was widely noted by participants.

One professor stated that “the student participation…was really invaluable to me as a faculty member because even though you have [course] evaluations, here we are talking about this stuff and thinking about it and right there you've got this sense of, well, no that's not going to work at all” (Day 4, morning). Another faculty member described what a good experience it was for him to work with a student “tearing apart one of my courses” (Day 4, morning). And yet another faculty member imagined the possibility of including students “not just at this

conceptualization stage but…as a T.A…or a monitor…one can imagine a whole range of alternative models as to how the student can play a continuing role in this [collaboration]" (Day 4, afternoon).

Librarians realized that they could benefit from student perspectives. As one librarian stated on the last day of the workshop, "I realize that I'd rather have more student input about what kind of resources they think are good" (Day 4, morning). And instructional technologists also re-imagined the student role: "one of the things we were talking about too is creating a course with the students…training them to do web development and web support for faculty" (Day 4, afternoon).

Several of the students commented on how this was the first time they felt really listened to, by everyone but by professors in particular. The student who worked with the professor "tearing apart" his syllabus explained:

> Sometimes you're talking to a professor and maybe it's registering but sometimes it's in one ear. [But here] maybe they thought they could actually benefit from this…that they were going to be better teachers or more fun in the classroom…I think there were many moments when [professors realized that talking with a] student ahead of time saves you the anxiety of planning a course that may or may not work. To realize that is a really liberating thing and I think that happened for a couple of people and I don't think they [had] imagined that as a possibility.

Positioning a student as an equal partner in creating learning opportunities, rather than as someone who merely gives feedback on learning opportunities she has experienced, requires a significant reconceptualization of the student identity and role.

<u>Questioning the Parameters of Roles</u>

One information technologist explained at dinner on the first night of the workshop that many IT people feel they should be unwavering advocates of technology and its integration into teaching. And yet some, including she herself, would feel more comfortable if she could find a balance between the roles of advocate and critic. In the same spirit, inspired to move beyond the parameters prescribed by the way his institution constructs his role, one information technologist explains:

> As a member of computing services it becomes so easy to function solely within the confines of our day to day maintenance of the critical college functions that I find I do not focus on the components of technology that really enhance the curricular mission of our institution. What has inspired me most over the past few days is the understanding that viewing the faculty/library/IT/student groups as a team – we can work together to create opportunities to use technology in a more integral fashion in a way that empowers all the players, and ultimately enriches the student experience. (Feedback, Day 3)

Other participants also considered ways that they might move beyond the roles prescribed for them. One instructional technologist queried: “How can I get faculty to teach me about their teaching/research goals instead of them just asking me to teach them about technology?” (Dinner, Day 1). And “How much should I do the technology work for people, how much to teach it to them so that they can do it themselves?” was a question many information technologists returned to over the course of the workshop. Moving even more explicitly into the pedagogical realm, one information technologist posed this question: “Who has the authority to make suggestions to professors?” (Dinner, Day 1). These questions illustrate that these participants did not want to settle for the clear delineations among roles and responsibilities they perceive in their educational contexts.

Conclusion

The kind of rethinking education in theory and in practice "Talking toward Techno-Pedagogy" facilitated flies in the face both of traditional roles assigned to members of academic communities and of the often uncritical embracing of information technology its advent prompts. Embracing rather than avoiding the actual and potential complexity of their identities and relationships, participants made impressive strides toward an innovative and generative model of collaboration. The feedback we received from workshop participants illustrates some of the ways in which they began to rethink constituencies' roles in general as well as some of the specific ways that they began to re-imagine roles for themselves and one another.

In part because of the emphasis of the workshop and in part because of the critical perspective team members brought, participants in "Talking toward Techno-Pedagogy" did not simply accept that technology always enhances learning. Rather, they examined the course content and the pedagogical approaches of the professors; they explored what kinds of learning needs and interests students have; and they analyzed how librarians, information technologists, and students can contribute to the improvement of both. This was important because questioning the reason for their collaboration — the advent of information technology — facilitated a deeper questioning of their roles in teaching and learning.

This careful consideration and open conversation both required and facilitated participants' rethinking their roles, perhaps taking risks and moving beyond the parameters of the script. They were inspired to work together early on and throughout the pedagogical planning process so that different constituencies can contribute their perspectives at various stages, not just the end, and so that all constituencies have a more continuous experience, rather than just being asked in to do a demo (librarian) and not knowing what its effect was or giving feedback on a course evaluation form (student) that benefits the next class but not one's own.

The conversations and collaborative relationships that formed or strengthened during this week took constructivism to a new level. While constructivism usually describes students taking a more active role in making sense of classroom material, in this case the conceptualization of learning included other players in the educational context, specifically librarians and information technologists. If, as Bruner argues, "One starts somewhere — where the learner *is*" (1977, p. xi), in this case the learner was not only the student but the faculty member, the librarian, and the information technologist as well. Even those who work within the conservative and often constraining conditions of the traditional college setting can begin to rethink themselves and others through the critical lenses and examples constructivism offers.

This rethinking helps us begin to complicate the hierarchy that designates different degrees of power and prestige to members of the academic community and integrate educational activities usually assigned to different constituencies. Team members can round out and enrich their activities, and these members of the educational community can co-construct and disseminate knowledge, teach and learn, together. In the process of unrolling roles that began during "Talking toward Techno-Pedagogy," many participants came to accept the notion that not only professors but also others — librarians, students, and information technologists among them — have valid and valuable perspectives on when and how to integrate technology into teaching.

This process continues as the teams that attended the May workshop work together in their respective contexts. With new understandings of their own and others' roles in relation to teaching, learning, and technology, they revise and strive to put into practice the plans they conceptualized and developed during their four days of "Talking toward Techno-Pedagogy." To promote this kind of revision of education in theory and practice higher education needs to be reconceptualized to provide time, support, and rewards for the unrolling of roles.

Postscript: We are maintaining a web site on which participants post their in-process plans, and with the ongoing participation of our anthropologist, we plan to conduct follow-up interviews with participants, both to document their progress and to continue to inspire and legitimate their efforts. The web-based documentation continues to inform our thinking and planning as we prepare for the next workshop this coming May. Questions regarding this project should be directed to acooksat@haverford.edu.

References

Angulo, A. J. and Bruce, M. (1999). Student perceptions of supplemental web-based instruction. Innovative Higher Education. 24, 2.

Apple, M.W. (1998). Teaching and technology: The hidden effects of computers on teachers and students. The curriculum: problem, politics, and possibilities. Beyer, L. E. and Apple, M. W. (eds.). New York: State University of New York Press. pp. 314-333.

Bates, A.W. (2000). Managing technological change: Strategies for college and university leaders. San Francisco: Jossey-Bass Publishers.

Batson, T. and Bass, R. (1996). Teaching and learning in the computer age. Change 28.

Batz, L. and Rosenberg, H. (1999). Creating an information literate school: Information literacy in action. NASSP Bulletin 83, 605, 68-74.

Branin, J.J., D'Elia, G., and Lund, D. (1994). Integrating information services in an academic setting: The organizational and technical challenge. CAUSE/EFFECT 17, 3, 26-31, 36-37.

Bruner, J. (1977). The process of education. Cambridge: Harvard University Press.

Carey, T. and Cartwright, G. P.(1996). Linking technology to campus strategy. Change 28. pp. 60-2.

Connell, R.W. (1994). Poverty and education. Harvard Educational Review, 64, 2, 125-149.

X. (In Press). Translating themselves: Becoming a teacher through text and talk. In Christopher M. Clark (ed.) Talking shop: Authentic conversation and teacher learning. New York: Teachers College Press.

X. (Under review). Re(in)forming the conversations: Including high school teachers and students in pre-service teacher education. Under review at Teachers College Record.

X. and Shultz, J. (Under Review). Author(iz)ing students' perspectives: Including student voices in conversations about schooling and reform. Under review at Educational Researcher.

X and Shultz, J. (Forthcoming). Starting where the learner is: Listening to students. In our own words: Student perspectives on school. Shultz, J. and X. (eds.). Latham: Rownman & Littlfield Publishers, Inc.

Corbett, D. and Wilson, B. (1995). Make a difference with, not for, students: A plea for researchers and reformers. Educational Researcher, 24, 5, 12-17.

Davidson, J. and Rusk, C. (1996). Creating a university web in a team environment. Journal of Academic Librarianship 22, 302-05.

Donham, J. (1999). Collaboration in the media center: Building partnerships for learning. NASSP Bulletin 83, 605, 20-6.

Eisenberg, M. and Lowe, C. (1999). Call to action: Getting serious about libraries and information in education. Multimedia Schools 6, 2, 18-21.

Ellsworth, E. (1992). Why doesn't this feel empowering? Working through the repressive myths of critical pedagogy. Luke, C. and G. J. (eds.). Feminisms and critical pedagogy. New York: Routledge.

Erickson, F. and Shultz, J. (1992). Students' experience of curriculum. Handbook of research on curriculum. Philip W. Jackson, editor. New York: Macmillan.

Fenstermacher, G. D. and J. F. Soltis. (1992). Approaches to teaching. New York: Teachers College Press.

Freire, P. (1990). Pedagogy of the oppressed. New York: The Continuum Publishing Company.

Haycock, K. (1999). Fostering collaboration, leadership and information literacy: Common behaviors of uncommon principals and faculties. NASSP Bulletin 83, 605, 82-7.

Heller-Ross, H. (1996). Librarian and faculty partnerships for distance education. MC Journal 4 Summer.

Johnson, J. D. (2000). Levels of success in implementing information technologies. Innovative Higher Education. 25, 1, 59-76.

Johnson, M., Linnenbrink, B., and Mitchell L. (1999). "I spy" in the library. Colorado Libraries 25, 3, 34-6.

Kent, T. W. and McNergney, R. F. (1999). Will technology really change education? From blackboard to web. Thousand Oaks, California: Corwin press, Inc.

Kozol, J. (1991). Savage inequalities: Children in america's schools. New York: Harper Perennial.

Ladson-Billings, G. (1994). The dreamkeepers: Successful teachers of african american children. San Francisco: Jossey-Bass.

Levin, J., Levin, S., and Waddoups, G. (1999). Multiplicity in learning and teaching: A framework for developing innovative online education. Journal of Research on Computing in Education 32, 2, 256-69.

Metropolitan Life Insurance Company. (1996). The Metropolitan Life survey of the American teacher, 1996: Students voice their opinions on: Their education, teachers and schools. Part II. Conducted for Metropolitan Life Insurance Company by Louis Harris and Associates, Inc.

Miller, M. A. (1997). Goodbye, mr. chips? Change 29, p. 4

Miller, J.W., Martineau,L. P., and Clark, R. C. (2000). Technology infusion and higher education: Changing teaching and learning. Innovative Higher Education. 24, 3.

Nieto, S. (1994). Lessons from students on creating a chance to dream. Harvard Educational Review, 64, 4, 392-426.

Noble, D. D. (1998). The regime of technology in education. The curriculum: Problem, politics, and possibilities. Beyer, L. E. and Apple, M. W. (eds.). New York: State University of New York Press. pp. 267-283.

O'Donnell, J. J. (1996). The digital challenge. The Wilson Quarterly 20 pp. 48-9

Oldfather, P. (ed.) (1995). Learning from Student Voices. Theory into Practice. 43, 2.

Oldfather, P. (1995). Songs "come back most to them": Students' experiences as researchers. Theory into Practice. 43, 2, 131-137.

Orner, M. (1992). Interrupting the calls for student voice in liberatory' education: A feminist poststructralist perspective. Luke, C. and G. J. (eds.). Feminisms and critical pedagogy. New York: Routledge.

Phelan, P., Davidson, A. L., and Cao, H. T. (1992). Speaking up: Students' perspectives on school. Phi Delta Kappan, 73, 9, 695-704.

Phelan, P., Davidson, A. L., and Yu, H. C. (1998). Adolescents' worlds: Negotiating family, peers, and school. New York: Teachers College Press.

Provenzo, E. F. Jr., Brett, A., and McCloskey, G. N. (1999). Computers, curriculum, and cultural change. Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.

Resnick, M. (1996). Distributed constructionism. The proceedings of the international conference on learning sciences. Association for the Advancement of Computing in Education. Northwestern University.

Rockman, I. F. (2000). More than faculty training: Integrating information competence into the disciplines. College & Research Libraries News 61, 3, 192-4.

Salamon, G. (ed). (1994). Distributed cognition. Cambridge, UK: Cambridge University Press.

Scardamalia, M. and Bereiter, C. (1991). Higher levels of agency for children in knowledge building: A challenge for the design of new knowledge media. Journal of the Learning Sciences. 1, 1, 37-68.

Schiller, N. (1996). Internet training and support for academic libraries and computer centers: Who's doing what? Internet Research 4, 2, 35-47.

Tompkins, P., Perry, S., and Lippincott, J.K. (1998). New learning communities: Collaboration, networking, and information literacy. Information Technology and Libraries 17, 2, 100-6.

Turner, V. (1980). Social dramas and stories about them. On narrative. Mitchell, W.J.T. (ed.) Chicago: The University of Chicago Press.

Weston, N. (1997). Distant voices, shared lives: Students creating the global learning community Educational Horizons 75, 4, 165-71.