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Collaborative Teaching in the Face of Productivity Concerns: The Dispersed Team Model

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ABSTRACT: The development of collaborative teaching efforts is briefly reviewed within the context of higher education today, which is a time of declining resources available for such efforts. Therefore costs must be considered in the promotion of collaboration, which most would likely agree is a positive element in the delivery of courses. Models of team coordinated teaching and team teaching are explained, and the authors identify four dimensions of collaboration—integration, interaction, active learning, and faculty autonomy. A successful model, which addresses both quality and cost concerns, is then offered.

The Higher Education Context

The undergraduate experience, often criticized as being fragmented, is challenged to develop more coherence by introducing students to essential knowledge, to connections across the disciplines, and to the application of knowledge to life beyond the campus. "As students see how the content of one course relates to that of others, they begin to make connections, and in doing so gain not only a more integrated view of the knowledge, but also a more authentic view of life" (Boyer, 1987, p. 92). Cardinal John Henry Newman (1873) advocated the development of the "integrative habit of mind," the highest of critical thinking skills, which seeks to make sense and create coherence. According to Mark van Doren, "the connectedness of things" means giving deliberate attention to finding and making connections" (Association of American Colleges, 1994, pp. 13-14). Faculty

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collaboration, within and across disciplines, enriches and improves the quality of teaching and learning, specifically integrative thinking.

As an outgrowth of the general education reforms of the past two decades, creative and powerful models of faculty collaboration were developed to promote integrative thinking in students. In traditional teaching arrangements, students enroll in separate courses and whatever integration takes place is often achieved by students on their own, if at all (Davis, 1995). Coming from different disciplines, faculty in collaborative teaching arrangements typically integrate material from various fields of knowledge into "a new, single, intellectually coherent entity" (Klein, 1990, p. 56). "A key element in collaborative learning is its epistemological perspective that knowledge is socially constructed, created by communities rather than individuals . . . knowledge is not poured into students but rather emerges from ongoing dialogue and social interaction among groups" (Austin & Baldwin, 1991, pp. 14-15).

Although collaboration has potential for the enhancement of learning, it can have a negative impact on resources, specifically class size, faculty-student ratio, faculty time, and classroom space. In response to these realities, a variety of models has been developed to advance the goals of faculty collaboration while attempting to contain costs. And of course, financial considerations are especially critical in the higher education environment in which we find ourselves today.

Higher education is under new pressures and intensified scrutiny for political, educational, and economic reasons. Tax-payers and tuition-payers are challenging institutions to be more accountable and to do more with fewer resources. The Pew Higher Education Research Program of 1991 accused higher education of lacking focus and purpose and predicted that higher education will be reduced in size and cost when the proper focus is achieved (House, 1994).

Financial pressures are driving institutional concerns about student enrollment and faculty-student ratios and elevating the debate about faculty productivity to departmental, college, university, and state levels. In 1993, the Colorado legislature mandated that higher education allocation formulas reflect campus productivity and teacher workload, that reviews of faculty productivity be conducted, including the establishment of measures of campus productivity and the setting of productivity targets for faculty. At the same time, Bruce Johnstone (1993), former chancellor of the SUNY system, warned against short-term preoccupation with class size and teaching loads as measures

of faculty productivity. "The most substantial and sustainable productivity gains in higher education lie in measures that lead to more student learning rather than from merely increased workloads of faculty . . ." (p. 38).

Given these contradictory signals, this article analyzes a variety of models of faculty collaboration in terms of both educational quality and costs. We discuss four key dimensions of collaborative models using examples ranging from simple team coordination to team teaching. In addition, we present an analysis of cost implications of collaborative teaching, before offering our "dispersed team model," which optimizes faculty collaboration while containing costs.

The most typical teaching in higher education involves no faculty collaboration but rather engages one faculty member teaching students in his or her course alone. The faculty member may follow an approved course description and syllabus, but conducts the course with great autonomy, individual style, professional judgment, and with little interaction with colleagues. Collaborative models for the purposes of analysis fall into two broad categories: those in which faculty come together only to coordinate their classes and activities and those in which the faculty are engaged to the point of team teaching.

Collaborative Models Using Team Coordination

The first category of models uses team coordination. Faculty and academic administrators create these models to develop more curricular coherence for students, to reduce the fragmentation of the curriculum, to stimulate learning across disciplines, and/or to motivate students to learn by associating with their peers. This set of models, which we have labeled "team-coordinated models," involves little faculty collaboration. They maintain more faculty autonomy, afford more individual pedagogical styles, require less interaction with faculty colleagues, and offer less curricular integration to students than models which use team teaching.

According to the typology for learning communities developed by Gabelnick, MacGregor, Matthews, and Smith (1990), *paired or linked courses* enroll a cohort of students in two courses, frequently a skills course and a content course. The degree of interaction between the faculty teaching the two courses varies, and the task of integrating knowledge is primarily left to the students.

In clusters, a cohort of students enrolls in two, three, or four courses linked by common themes, historical periods, issues, or problems. This model has also been called an *integrated cluster of independent courses* (Daniels, 1984). In many cases a seminar is offered before or during the offering of the cluster courses. In such a seminar the faculty member attempts to integrate the course material around the common theme or issue and challenges students to see multiple perspectives and connections among the courses.

Freshman interest groups are designed to enroll first-year students in up to three existing topically-related courses. Generally, faculty are not expected to participate in planning nor are they expected to deliver their courses differently. Students meet weekly with a peer advisor who attempts to connect the content of the courses.

In these three team-coordinated models, faculty are engaged in only limited ways in coordinating the content or delivery of their courses with colleagues in different disciplines. Generally the faculty maintain their autonomy and have little interaction or opportunity to learn and be challenged by each other. Since the time demands are few, these models have little impact on faculty load or class size because students register for separate courses. The models are designed to bring students together for common academic experiences, and some of the models attempt to foster coherence and integrative thinking through seminars or peer advising outside courses.

Collaborative Models Using Team Teaching

The second category of models, characterized by some degree of team teaching and greater faculty collaboration, results in increased curricular coherence, greater involvement of faculty with colleagues and a corresponding reduction in autonomy, increased sharing of ideas and styles, higher demands to learn and teach outside one's discipline, and the challenge to model active learning for students.

In the typology of learning communities outlined by Gabelnick et al. (1990), *federated learning communities* and *coordinated studies* are characterized as having more curricular coherence and interaction by faculty than the team-coordinated models. In federated learning communities a cohort of students enrolls in three thematically-related courses and participates in a three-credit content-synthesizing seminar led by a Master Learner who attends the courses as well. The seminar leader is a Master Learner, typically a faculty member from

another discipline, who helps students discover connections across the courses and integrate content across disciplines. In some cases a core course is offered that is planned and delivered by the faculty in the thematically-related courses. Faculty engage in integrating curriculum content only if they are offering a core course or serving as Master Learner.

Coordinated studies are the most collaborative of all the models because a cohort of students and a team of faculty drawn from different disciplines are engaged in a large unit of instruction arranged around a central theme in an intensive block of time. The faculty develop the course, plan and participate in all aspects of the program; coordinate themes, connections, and questions; and offer the course in large- and small-group instructional arrangements. The model is implemented at Evergreen State College to offer courses such as "Reflections of Nature" which integrates the visual arts, physics, biology, literature, and computer science. This model demands the most faculty collaboration and interaction with each other and students, curricular integration, opportunity for faculty to model active learning, time and effort in planning; but it allows the least faculty autonomy.

Dimensions of Collaboration in Teaching and Learning

The models of collaboration in interdisciplinary courses and team teaching just described vary along four dimensions, reflecting the essential elements of collaboration and its potential for student learning[1]:

- the degree of integration of ideas, perspectives, and discipline-based knowledge that enhances learning and teaching;
- the degree of interaction of faculty members with students in the teaching and learning process;
- the degree of active learning and student engagement in the learning process;
- and the degree of faculty autonomy or interdependence in the teaching and learning process.

[1]James R. Davis (1995) in *Interdisciplinary Courses and Team Teaching* describes four areas of collaboration in the process of developing interdisciplinary courses, while our four dimensions apply specifically to collaboration in the courses themselves.

Degree of Integration

One of the most basic dimensions along which the collaborative models vary is the degree of integration, specifically curricular integration and integrative thinking. Curricular coherence facilitates student understanding of connectedness of knowledge and integrative learning. As part of this effort to enhance integrative thinking, faculty collaboration is often undertaken in the service of interdisciplinary learning. The curricular reforms of general education which began in the 1980s sought to develop students' ability to integrate knowledge, not once they are enrolled in graduate school, but as integral to the goals of general education. These curricula were designed to challenge and support undergraduate student development and students' ability to integrate multiple perspectives, creating learning communities which seek to connect, not erase disciplinary boundaries, and to allow faculty to reassemble a world that may have become fragmented and highly individualistic (Gabelnick et al., 1990). In the integrative process, members of interdisciplinary teams translate specialized knowledge into a "synthetic product" (Klein, 1990, p. 190). "Team teaching can be wonderful, as both faculty and students are 'surprised by joy' when they make hitherto unseen connections and experience the lovely rigor of intellectual activity" (Rinn & Weir, 1984, p. 10). Clearly, faculty collaboration in curriculum design and teaching is critical to fostering integrative thinking.

According to the late Ernest Boyer (1987) of the Carnegie Foundation, "the undergraduate experience in general education is not complete unless the subject matter of one discipline is made to touch another. Bridges between disciplines must be built, and the core program must be seen ultimately as relating the curriculum consequentially to life" (p. 91). When they participate in collaborative curricular activities, faculty members move away from their individual disciplines to a broader view of their discipline and where it fits into the larger context of knowledge. Their collaboration sets the stage for the integration of student thinking.

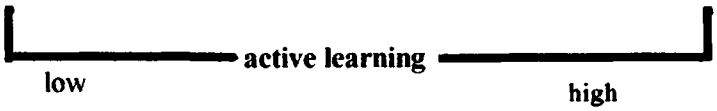
Curricular models that seek to connect disciplinary boundaries put learning into context and challenge teachers to define what is worth studying. These models, including learning communities, employ faculty collaboration and vary in the degree of curricular integration they support and demand. At the low end of the integration dimension are those programs that link two or more courses and have students co-register; but the faculty have little or no involvement in planning readings, assignments, goals, or promoting interconnections across their disciplines. At the high end of the dimension, where there is greater curricular integration, the educational experience may involve team teaching in interdisciplinary or transdisciplinary courses.

Degree of Interaction

The second dimension—collaboration among faculty and among students, in and out of classrooms—creates the circumstances that enhance learning. Bernard Murchland (1991) points out that it is no accident that Socrates invented the dialectic process at the same time his contemporaries were inventing democracy. Democracy, founded on the core belief in the value of everyone's participation in governance, relies on the exchange of ideas, perspectives, and values as the vehicle for achieving a better understanding, for discovering what is best, even what is true. Bringing learners, faculty members and students together in the same space has within it the fundamental elements of the Athenian polis. Smith and McGregor (1992) describe the product of collaboration as follows: ". . . it creates new ideas and new meaning . . . peers identify and solve problems . . . perspectives . . . clarify and illuminate learning for all involved . . . talk . . . improves . . . understanding of the topic under consideration" (pp. 8-9). The dimension of interaction focuses on an exchange among participants. As one listens and speaks, one comes to a better understanding; and one's peers in turn also come to a better understanding

(Gabelnick et al., 1990). Both faculty and students, as learners with different levels of expertise, contribute to the conversation. When it is possible to have faculty members interacting with each other in the classroom, the conversation is enhanced by their expertise and perspectives; and, as a result, faculty learn and are reinvigorated as learners and teachers by interacting with each other and with students (Gabelnick et al., 1990). "Since the Greeks, dialogue has been acknowledged as one of the finest methods of learning. While teaching, the instructors are drawing from each other and from themselves both factual and conceptual knowledge that might otherwise lie dormant. Lecturing in isolation, individual instructors lack both the insightful criticism and exposure to alternate styles necessary to expand and reform presentations, thus denying for themselves the accessibility of ongoing renewal" (Quinn & Kanter, 1984, p. 1, cited in Austin & Baldwin, 1991, p. 42).

Degree of Active Learning

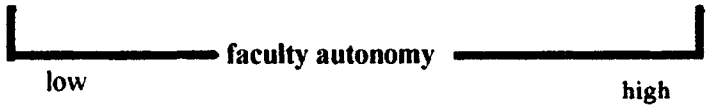


The active learning dimension is based on the notion that ideally a student needs to be an active participant in the process of his or her learning. This dimension is measured in terms of the degree to which students and faculty members are engaged in thinking about the material together. Students must not be passive spectators merely recording the "word" even if they are recording a discussion among faculty. Faculty must not merely deliver the word; they must engage students in the material for full learning to take place. Moreover, no matter how well-prepared a lecture, absent the teacher actively involving students in an effort to understand the course subject matter, learning is rarely maximized. Realizing that their intellectual dilemmas are shared by their professors empowers students and leads them to be engaged in their studies (Association of American Colleges, 1994). Charles C. Bonwell and James A. Eison (1991) characterize active learning as classroom strategies that involve students in more than listening, that engage students in higher-order thinking

and activities, that place less emphasis on transmitting knowledge and more on developing students' skills, and that encourage students to explore their own attitudes and values (p. 2).

So students, with their peers, must be placed in learning situations in class where they have to grapple with ideas and perspectives for active learning to be realized. Collaboration models vary in the degree to which they demand low to high degrees of active student learning.

Degree of Faculty Autonomy



In traditional higher education instructional settings, faculty have had virtual autonomy in the design and delivery of their courses within the parameters of an approved course description. It is often behind the closed door that faculty are engaged with their students. Except for the rare visit by a peer or academic administrator for evaluation purposes, the faculty member teaches unobserved and unrestrained in the conduct of his or her course. Faculty autonomy has personal advantages for the faculty member, but some potential disadvantages for students.

Across the range of collaborative models, faculty engage with their colleagues in varying degrees of discussion, planning, delivery, assessment of student learning, and evaluation of courses. Real collaboration cannot help but create conflict; and it requires compromise, sharing of power and responsibility, exposure to ideas and teaching styles of colleagues, and loss of autonomy for faculty. Collaboration requires faculty to be responsible to each other for planning and teaching whereas previously they planned on their own time and taught in their own way. The least collaborative models described in the literature have minimal effect on faculty autonomy where, at the extreme, courses are linked, with students enrolled in two courses concurrently, but faculty not involved with each other in or out of the classroom. The most collaborative models have faculty engaged together in plan-

ning and delivering courses or whole blocks of courses which are team taught.

In collaborating, faculty give up some of their autonomy to plan a course with a colleague around a curricular theme, common assignments and readings, shared presentations, and shared expectations and grading systems for student work. Faculty in collaborative models, depending on which type, are exposing themselves and their teaching to their colleagues and engaging in experimentation. Such collaboration, however, has the potential for enhancing quality and raising expectations. This kind of collaboration takes time, especially in the beginning, and requires respect, hard work, negotiating skills, punctuality, tactfulness, and good communication (Gabelnick et al., 1990).

Cost Implications

Even if we are sold on the values and benefits of faculty collaboration, models that do not consider the impact on faculty load and cost of the course are short-lived. For the purposes of this analysis of the financial implications of faculty collaboration, often described in terms of productivity, we have chosen to differentiate between productivity of two kinds: short term and long term. Short term productivity involves those financial considerations driven by the immediate bottom line. The immediate bottom line is measured by students consuming credits or, put differently, purchasing credits (courses) and the need for the institution to produce those credits at the least possible cost. As a result, institutions tend to maximize class size and the number of credits generated by courses, and/or to decrease per unit instructional costs, by using fewer full-time faculty, fewer expensive faculty, and more of the least expensive part-time faculty. However, where an institution's budget constraints allow greater leeway on the average cost of producing a credit hour, greater variation in class size and the number of faculty teaching courses is made financially possible. Moreover, expectations on class size vary by what is considered acceptable to consumers (students and parents) at a particular institution and by the institution's own tradition and the expectations which that tradition supports.

In the short run, some institutions simply do not have sufficient income, given demands on that income, to reduce class size and hire additional faculty; financial survival in the short term drives the de-

cision making. To achieve collaboration by having more than one teacher in a classroom is typically very expensive and negatively influences short term productivity, however desirable it might be in terms of learning outcomes or longer-term productivity. Even in the short term, however, an extreme emphasis on producing income by increasing class size and reducing the number of full-time faculty (all things being equal) can lead to increased attrition and thus be counterproductive to the bottom line. Consumers can vote with their feet; they have the option to walk away, to attend somewhere else. As a result, institutions work within parameters, however broad, that limit even the benefits of simply maximizing the credits produced and minimizing the costs of producing them.

Many short term productivity considerations are in the longer term self-destructive for an institution, as Johnstone (1993) and others have warned. In general, larger and larger classes, fewer full-time faculty and more part-time faculty mean less interaction for students with faculty, in and out of the classroom, and with each other. These choices mean that innovation and curricular change are less likely to happen as full-time faculty have less and less time and energy to invest in change. Less or no interaction and little innovation likely mean that conditions for improving, let alone maximizing, learning are not present. While technology-assisted pedagogical change can help ease the pressures of class size and faculty availability, at this point, it cannot fully substitute for the interaction between faculty and students and the learning such interaction engenders.

Productivity in the longer term has been, and increasingly will be, driven by considerably different measures, but will continue to include financial considerations. Probably few marketplaces operate on more imperfect information than the higher education marketplace; consumers (students and parents) have long selected a college or university, at least in terms of academic quality, based on vague notions of reputation and prestige. These perceptions of academic quality have been the basis for ranking colleges and universities. Consumers have also been focused narrowly on input measures such as average SAT scores and high school class rank (Astin, 1985). We have entered, however, a new era in which consumers and governments are increasingly demanding demonstration of the value of the product we all produce. They are demanding, in essence, documentation of student learning, evidence of the value added by higher education. The issue is quality, or more accurately, perceived quality.

If the assessment/consumer movement is effective in creating a focus on "measures" of learning outcomes, it has the potential to change the basis for the perception of quality. In that brave new world, information about academic quality focused on value-added education will be more widely available. In that world, institutions which have focused on long-term productivity, on how much learning is accomplished for the typical student in a program or college, will be increasingly attractive to students and parents. Faculty productivity will be measured by the extent of student learning. All this will favorably influence the transformation of the classroom again for the purpose of maximizing learning, not merely generating credits. We believe that collaborative models of teaching and learning will be increasingly adopted because they have the potential to improve learning outcomes.

When these collaborative models are adopted, an institution's cost of doing business will also be increased as it attempts to achieve the conditions that will produce the desired learning outcomes. Some institutions, it should be noted, may not survive the increased costs involved in producing not simply credits but specific learning outcomes. The challenge is to create conditions that will result in improved learning that do not dramatically increase costs but do require a change in the typical undergraduate curriculum and pedagogy.

Balancing Quality and Cost Concerns: The Dispersed Team Model

Higher education can only afford the occasional expensive pilot project or experimental curriculum. To be sustained, new curricular models must fit the existing structures as much as possible, maintain or increase faculty productivity, and not increase faculty-student ratios. The challenge is to balance the values of faculty collaboration and all the benefits it brings to students with the realities of administering and budgeting academic programs. Some of the early models that explored collaboration, such as linked courses, did not interfere with faculty load or faculty-student ratios, but they did not foster much collaboration either. More intense models that involve team teaching, however, have the potential to double the cost of delivering each academic credit by having two faculty members in the classroom. To soften this financial impact, seminars were added to inte-

grate content from three separate courses; seminars conducted by students or master learners who are not faculty members attempted to reap some of the benefits of collaboration while minimizing the costs. Intense collaboration like the coordinated studies model of Evergreen State College requires radical changes to the delivery system, course scheduling format, and teaching and learning styles of faculty and students. The cost of the coordinated studies model is not as much as traditional team teaching models, but to be effective in achieving their learning goals the optimal class size must be small.

Cost and quality are important factors in designing and delivering curricula and courses. Lack of consideration for one or the other tips the balance and threatens the survival of the model, either because it is too expensive or is so cost effective that students are not receiving the attention they need because classes are too big. Not all institutions are ready to revamp the entire curriculum, course schedule, and delivery system to offer semester long, thematically-oriented, team-taught, interdisciplinary courses in the coordinated studies model. Therefore, we have created the "dispersed team model" to maximize quality through team teaching and collaboration in a learning community while controlling costs by maintaining the existing faculty load and faculty-student ratio.

The All-University Curriculum (AUC), created in 1987, is the central part of the general education requirements for the eight baccalaureate-granting schools and colleges of the University of Hartford. Included are a professional art school and music conservatory, an engineering college and another devoted to technology, a business school, a large and growing health professions division, as well as a liberal arts and sciences college. The dispersed team model was created to allow the AUC curriculum to be both interdisciplinary and collaborative. The four dimensions of collaboration discussed earlier (integration, interaction, active learning, faculty autonomy) are addressed successfully by the dispersed team model. Moreover, the demands of institutional budgets, driven by the costs of educational activity in most circumstances, are also reasonably addressed by the model. To address both collaboration and a financially viable teaching arrangement, a model cannot maximize one at the expense of the other and still be workable for most colleges, let alone a comprehensive university.

The dispersed team model begins with the first in a series of collaborations when a team of faculty from three different disciplines develops a proposal for a new interdisciplinary course. The proposed

course is reviewed by a committee of faculty from across the University along a number of dimensions, such as the degree of integration proposed, the planning for active learning in the course, and the specification of learning outcomes including integrative skills arising from the interdisciplinary aspects of the course. After a process of comment, revision, and approval by the AUC Committee, the team of faculty sets about preparing the course in greater detail. The faculty members work together to make connections and to understand the issue or topic not only from one perspective but from the perspectives of a number of other disciplines. The team preparation phase is characterized by faculty learning and collaboration, which set the stage for enhancing class meetings in the dispersed team model.

The course meets two or three times a week in the dispersed team model, once a week with the faculty team together with all the students of the course (about 75) and once or twice a week as three groups or sections, each with one of three faculty members. This course meeting arrangement provides opportunities for integration and interaction as the faculty teach and discuss the material together and engage students in the conversation. It also provides a small class environment with 25 or fewer students in which a faculty member can foster still more interaction and active learning opportunities, as well as connect more closely with students. When three faculty are teaching, conversing, and presenting together at least once a week, the dispersed team model does not incur the dramatic increase in costs associated with a pure (full-time) team teaching model. It provides small class learning opportunities without sacrificing the benefits of team teaching and integration. A team of faculty members typically spends weeks or months preparing a course; they no longer view the material from the limiting perspective of a single discipline. They are each "master learners" making connections across disciplines, assessing the nature of those connections along with the students, in the sections as well as in the team-taught weekly meetings. For example, in the course entitled "Romanticism in the Arts," faculty from music history, art history, and literature team teach using the dispersed team model, with each faculty member having a section in which up to 25 students are enrolled. Once a week, all three faculty and 75 students come together for a session to share ideas, perspectives, and knowledge. In the second and third meetings of each week students meet with their professor in small sections. The faculty plan, implement, and evaluate the course as a team, so they

are learners as well as teachers; and students benefit from the rich integrative nature of the course.

In essence, the model creates an average class size of 25, which typically is financially acceptable, and still allows for an interdisciplinary course that is team-developed and team-taught once a week. It responds both to the demand for integration and collaboration and to the budget demand to keep the per credit hour costs to a reasonable level. It provides faculty with the opportunity to work together, to be interdependent in the classroom and collaborative in terms of material presented and discussed in the team-taught weekly classes, and to allow for some faculty autonomy in the sections and a closer connection with a group of students than one finds in a traditional stand-alone class. Faculty are, moreover, not teaching three different courses, but rather one integrated, interdisciplinary course.

The model has two shortcomings worth emphasizing. It is not a pure team-taught class for all weekly meetings and thus does not in every class meeting provide the level of faculty interaction found in a class that is entirely team-taught. The second shortcoming of the dispersed team model is that it offers the team-taught meeting to 75 students, which is not likely to get students as fully involved in the interactions as a class of 25 would. In both cases, however, the model is not without a response. It does provide a team-taught interdisciplinary teaching experience every week of the course. It does provide a relatively small class twice a week in an interdisciplinary course that allows for and plans for a great deal of interaction and active learning. It does provide the desired mix of faculty interdependence and autonomy as well.

Interdependence and autonomy lead naturally to one of the most important secondary benefits of creating an interdisciplinary general education curriculum in a comprehensive university—fostering community for the faculty and students. Faculty from all nine schools and colleges are now interacting along substantive rather than only political grounds; they are enriching each others' teaching experiences, and, most importantly, they are learning from each other. Students from about seventy different majors are not only taking courses together, but are taking courses designed to increase interaction and respect for different perspectives.

The literature on the efficacy of team teaching is lean at the postsecondary level. Flanagan and Ralston (1983) and Newstrom (1981) report increases in student interest in course material, and Sullivan (1991) found higher student satisfaction in team-taught courses. Coo-

per and Mueck (1990) and Slavin (1983) found that minority and female students responded particularly well in cooperative learning formats. "Although some students may find it unsettling to be confronted with alternative interpretations, the majority appreciate this more realistic view of . . . discourse" (Lindauer, 1990, p. 72). Anecdotal feedback about the power of collaborative teaching and learning is more common. According to a female student who had developed an integrative habit of mind quoted by Belenky, Clinchy, Goldberger, and Tarule (1986), "I am starting to care about academics. I'm beginning to feel that my courses have been connected. It's much more interesting once one discipline starts to interconnect with others. You can go through your own courses, pull together your own connections, figure out connections yourself" (p. 140).

Students enrolled in courses using the dispersed team model at the University of Hartford have several opportunities to critique their courses during and after the course, in focus groups and personal interviews, and on course evaluation forms. Many students appreciate the richness of the learning community, the multiple perspectives and voices, the integrative experience they are challenged to experience. Not surprisingly, however, other students, more comfortable in traditional didactic lecture formats, struggle with the ambiguity of faculty conversations when no "right answer" or one truth is communicated which they can write in their notes. They are likely to be "dualists," as first described by William Perry (1970), who complain that, if this teacher cannot give them the truth, they want a better teacher. The experience, while uncomfortable to some students, is designed to support and encourage their development and integrative thinking. Faculty involved in the dispersed teams participate in ongoing evaluations of the courses, often inviting faculty from outside the team to visit and to evaluate the courses. Every other year outside consultants offer extensive reviews of the courses and the general education curriculum of which they are a critical component. The assessment of student learning outcomes, the true measure of the quality of the courses, is under development.

Conclusion

Collaboration in teaching and learning is both an educationally desirable reform and one that has the potential to help institutions meet increasing expectations for improved learning outcomes that are

the result of the assessment and consumer movements of the 1990s. If they are to be widely adopted in higher education, models involving faculty collaboration must do so without dramatically increasing costs. The dispersed team model is an example of collaborative teaching and learning that is cost effective as well. Such a model may be increasingly adopted by institutions as they search for models that may help in improving learning outcomes.

References

Association of American Colleges. (1994). *Strong foundations: Twelve principles for effective general education programs.* Washington, DC.

Astin, A. W. (1985). *Achieving educational excellence: A critical assessment of priorities and practices in higher education.* San Francisco: Jossey-Bass.

Austin, A. E., & Baldwin, R. G. (1991). *Faculty collaboration: Enhancing the quality of scholarship and teaching.* ASHE ERIC Higher Education Report No. 7. Washington, DC: The George Washington University School of Education and Human Development.

Belenky, M. F., Clinchy, B. M., Goldberger, N. R., & Tarule, J. M. (1986). *Women's ways on knowing: The development of self, voice, and mind.* New York: Basic Books, Inc.

Bonwell, C. C., & Eison, J. A. (1991). *Active learning: Creating excitement in the classroom.* ASHE ERIC Higher Education Report No. 1. Washington, DC: The George Washington University School of Education and Human Development.

Boyer, E. L. (1987). *College: The undergraduate experience in America.* New York: Harper and Row.

Cooper, J., & Mueck, R. (1990). Student involvement in learning: Cooperative learning and college instruction. *Journal of Excellence in College Teaching, 1,* 68-76.

Daniels, C. (1984). Integrated cluster of independent courses: An ideal curricular cluster. *Innovative Higher Education, 8,* 115-123.

Davis, J. R. (1995). *Interdisciplinary courses and team teaching: New arrangements for learning.* Phoenix: American Council on Education and Oryx Press.

Flanagan, M. F., & Ralston, D. A. (1983). Intra-coordinated team teaching: Benefits for both students and instructors. *Teaching of Psychology, 10* (2), 116-117.

Gabelnick, F., MacGregor, J., Matthews, R. S., & Smith, B .L. (1990). *Learning communities: Creating connections among students, faculty, and disciplines. New directions for teaching and learning, 41.* San Francisco: Jossey-Bass.

Harmin, M. (1994). *Inspiring active learning: A handbook for teachers.* Alexandria VA: Association for Supervision and Curriculum Development.

House, E. R. (1994). Policy and productivity. *Educational Researcher, 23* (5), 27-32.

Johnstone, D. B. (1993). Enhancing the productivity of learning. *AAHE Bulletin, 46* (4), 2-8.

Klein, J. T. (1990). *Interdisciplinarity: History, theory, and practice.* Detroit: Wayne State University Press.

Lindauer, D. L. (1990). A new approach to team teaching. *Journal of Economic Education, 4* (1), 71-72.

Murchland, B. (Ed.). (1991). *Higher education and the practice of democratic politics: A political education reader.* Dayton, OH: Kettering Foundation.

Newman, J. H. (1947, originally published 1873) *The idea of a university.* New York: Longmans, Green.

Newstrom, J. (1981, July). The dynamics of effective team teaching. *Personnel Administrator*, 56-58, 64.

Perry, W. G. (1970). *Forms of intellectual and ethical development in the college years*. New York: Holt, Rinehart & Winston.

Rinn, F. J. & Weir, S. B. (1984). Yea, team. *Improving college and university teaching, 32* (1), 5-10.

Smith, B. L., & MacGregor, J. (1992). What is collaborative learning? In A. Goodsell et al. (Eds.), *Collaborative learning: A sourcebook for higher education*. University Park, PA: National Center on Postsecondary Teaching and Learning Assessment.

Slavin, R. E. (1980). *Using student team learning*. (Rev. ed.) Baltimore: The Johns Hopkins University.

Sullivan, S. E. (1991). Are two heads better than one? An empirical examination of team teaching. *College Student Journal, 25*, 308-315.