

Assessing Integrative Learning: Insights from Washington Center's National Project on Assessing Learning in Learning Communities¹

Emily Lardner and Gillies Malnarich, Co-Directors
Washington Center for Improving Undergraduate Education
The Evergreen State College

Abstract: Findings from a national participatory research project, which examined student work in learning communities, highlight the assignment designs that help students become more able integrative learners and thinkers.

What kind of learning do learning communities make possible? This question has been at the forefront of a two-year participatory research project initiated in September 2006 by the Washington Center for Improving the Quality of Undergraduate Education.¹ The project is the first in a series of research initiatives with campus partners where the overarching aim is explicitly ambitious: to assess and enhance students' learning in learning communities, the least-researched dimension of learning communities nationally.

The campus teams that became co-researchers in the National Project on Assessing Learning in Learning Communities include two- and four-year institutions whose learning community program—regardless of institution type or size—meets the contemporary definition of a learning community: a cohort of students enrolled in two or more classes whose experiences of learning include intentionally-designed integrative learning.²

Throughout the project, participating teams agreed to examine student work from their learning community program using a collaborative assessment protocol based on Veronica Boix-Mansilla's research on the nature of interdisciplinarity (see Appendix 1). As the project and our critical inquiry progressed, teams also agreed to refine assignments given to students in learning communities using a heuristic developed by Washington Center's co-directors (see Appendix 2). Using these two core tools to assess and improve student learning constituted the foundational work of the project.

As Lee Shulman (1999) observed a decade ago in *Taking Learning Seriously*, "Learning flourishes when we take what we think we know and offer it as community property among fellow learners so that it can be tested, examined, challenged, and improved before we internalize it" (p.12). Teams' willingness to make sense of their own campus discoveries and puzzles in the company of colleagues from other institutions—a mix of newcomers to learning community work and veterans with over thirty years' experience—turned our collaborative inquiry into powerful communal learning.

As we review team reports and the "a-ha" moments sparked by national work sessions, findings already signal fresh understandings: a clarity about integrative as compared to interdisciplinary learning; a valuing of the varied forms and developmental stages integrative learning can take; a broadening of disciplinary knowledge to encompass fields of study; an appreciation of the disciplinary grounding

¹ Article forthcoming: *Journal of Learning Communities Research*: Volume 3, No. 3

required to deepen integrative assignment design; and a recognition that as faculty we need to become more precise about exactly *what* we invite students to integrate. Senior faculty also note that conversations over the two-year period—with student work as a constant touchstone—led to the most stimulating professional development in their careers.

In this article, we begin by reviewing the gap in learning community research and assessment that provided the impetus for the project and shaped its purpose and method. Then, we highlight three findings that are already influencing learning community practice: the relationship between integrative and interdisciplinary curriculum; the power of examining student work collectively; and, the nature of disciplinary grounding, especially in working with first-year students.

The Learning Gap in Learning Community Research and Assessment

When the National Learning Communities Project³ published *Learning Community Research and Assessment: What We Know Now* (2003), learning community practitioners eagerly awaited the findings of the first comprehensive account of existing research studies on learning community work. The research team—Kathe Taylor, William S. Moore, Jean MacGregor, and Jerry Linblad—studied every program assessment, institutional research report, thesis, dissertation, and national study they could find. Their conclusions confirmed what we hoped would be the case, but they also identified a sizable gap in the research literature.

The good news placed learning communities in mainstream higher education. Learning community programs, whether getting started or well-established, could be found on diverse campuses throughout the United States. The even better news was that students enrolled in learning communities—defined by the research team as a cohort taking the same classes, often with a unifying theme, and often tied to a residence life experience—stayed in school. Retention rates and academic achievement for these students compared positively with peers enrolled in stand-alone classes. These affirming results were replicated in programs geared toward entering students in developmental, college-level and honor programs, in learning communities designed to meet general education requirements or as introductions to the majors and professions, and in programs that combined curriculum and co-curriculum offerings in multiple ways.

But, as the authors pointed out, “learning community assessment and research can and should probe more deeply into the nature of learning community interventions, and the nature of their impact on the learning of students, those who serve on teaching teams, and institutions” (p. iii). In fact, most studies assessed what could easily be assessed, the quantifiable data that skirts learning—student retention, grades, grade point average, and student satisfaction. The more difficult task of assessing what students understand and know how to do, given the objectives and curriculum of particular learning community programs, was rarely present in studies let alone probed.

Similar to the challenges facing the assessment movement in higher education, the research team called on educators involved in learning community work to find ways to document and assess the actual learning students experience in learning communities. As Vincent Tinto, who led the first national study on learning communities emphasized in the preface to *Learning Community Research and Assessment: What We Know Now*, “learning community assessment needs to move toward more complex, higher-order measures to fully illuminate the powerful impact of learning communities on both students and faculty and to identify those practices that foster or hinder positive results” (p. ii). We designed the National Project on Assessing Learning in Learning Communities as a pedagogical and classroom-based research response to Taylor and her colleagues’ invitation to “move more deeply into the nature of student learning and the nature of professional development for faculty and staff members” (p. iv).

Project Overview: Defining Purpose and Expectations

As longtime teachers, we believe that the best way to figure out what students are learning is to examine student work. When thinking through our expectations for a national project founded on this premise, two questions preoccupied us: by what means could the essentially private work faculty do when they evaluate student work become the focus of collective, public examination? And, how could the kind of collaborative inquiry we envisioned embrace both the “pedagogy of substance”—Shulman's term to describe the specific disciplinary and professional grounding which informs teaching excellence—and the more general insights which might advance national learning community practice?

With these questions in mind, we wanted to work with campuses whose learning community initiatives have been keeping pace with evolving practice—initiatives that share our “core assumptions” about learning community work and faculty development. The call for applications described those assumptions in this way:

- 1) learning community work should be designed in the context of an analysis of campus facts including disaggregated student demographics, disaggregated student retention and academic achievement rates, and the identification of curricular trouble spots—courses with high drop-out rates and/or low success rates—as well as trouble spots within courses;
- 2) students within learning communities need opportunities to develop and demonstrate substantive learning that draws on disciplinary and interdisciplinary understanding and is connected to problems and issues in the world;
- 3) collaborative discussions about authentic assessments of student learning provide an ongoing source of learning and intellectual engagement for faculty; and
- 4) learning community programs are enriched by strong scholarship of teaching and learning (SOTL) initiatives.

In brief, we sought campuses where learning communities are viewed as a means both to tackle long-standing problems in higher education such as high drop-out rates and low student achievement, and to promote deep engagement and substantive learning. We wanted project co-researchers to be knowledgeable regarding the shift in perspective from seeing learning communities as a series of models to using learning communities as an intervention strategy aimed at improving student engagement, the quality of learning, and—as a byproduct—student persistence and retention. To participate, a campus team needed at least three faculty members currently teaching in learning communities who would be committed to exploring collaborative approaches to assessing student learning. We imagined that their discoveries would lead to broader campus conversations and faculty enrichment workshops as well as scholarly inquiry among learning community practitioners to address the learning gap in learning community research and assessment.

With no external funding and limited seed money, we posted a call for applications on the national learning communities listserv, circulated a flyer at the June 2006 National Summer Institute, and sent email to teams who had been involved in past Washington Center national and regional initiatives. We intended to limit project participation to ten teams, but within two weeks of the call going out, thirteen two-year colleges and fourteen four-year colleges successfully completed the application process. Most campuses had been involved in recent assessment projects or were gearing up for program reviews or accreditation visits; a few saw in the project a means to revitalize faculty involvement in long-standing learning community programs.

Campuses selected for the project received a modest \$500 stipend each term to support faculty meetings and complete bi-annual project reports; their institutions generously agreed to pay team members' travel, accommodation, and material costs for four national gatherings. By the end of year two, ten two-year schools and nine four-year schools were actively involved,⁴ and on the project's completion, nine schools submitted integrative assignments and thirteen submitted final reports.⁵ All schools accepted for the project had access to a member login area of the website containing resources related to the project, including the scholarly leadership provided by Veronica Boix-Mansilla as well as materials developed by Boix-Mansilla and Washington Center co-directors.

The question—what kind of learning do learning communities make possible—turned into a meaningful and revealing inquiry on campuses and at national meetings. Team commitment to developing students' abilities as integrative thinkers moved from an agreement in words to a deeper sense of what high-quality integrative learning actually involves.

Project Method: Using the Collaborative Assessment Protocol

Boix-Mansilla's 2005 *Change* article, "Assessing Student Learning at Disciplinary Crossroads" catalyzed our thinking about how we might assess learning in learning communities. In that article, Boix-Mansilla argues for a definition of the elements of interdisciplinary work based on empirical research she did with Howard Gardner. Embedded in the definition she puts forward are four key elements: 1) interdisciplinary work is purposeful; 2) it has grounding in two or more disciplines; 3) it integrates those disciplines to achieve an insight that would not be possible without access to those disciplines; and 4) it has an element of thoughtfulness about it. Because of the strong historical association between learning communities and interdisciplinary work, we felt that the specificity of this account presented an opportunity for exploring student work across campuses in a new and focused way.

Early on in conversations with Boix-Mansilla about how we might approach our collaborative assessment project, she referred us to *The Evidence Process* (2001), a publication documenting a collaborative research process undertaken by elementary teachers and researchers at Project Zero. Like us, those teachers were looking for ways to assess the effectiveness of teaching in order to improve student learning, using actual student work as the basis for collaborative conversations. As the Project Zero staff who wrote *The Evidence Process* point out, "we called this method the Evidence Process because we wanted to develop a model for teachers to assess their instructional practice that was grounded in specific artifacts of learning and teaching that come directly from the classroom—samples of student work, observations of students at work, teacher created materials, and so on. These artifacts can make student learning, and how teaching supports that learning, more visible or evident" (p. 2). Like the teachers involved in *The Evidence Process*, we decided to use a protocol to organize our conversations, and *The Evidence Process* book became one of our core readings.

Boix-Mansilla developed a targeted collaborative assessment protocol to challenge a pattern of conversation in which student learning is exclusively viewed in terms of single faculty teaching goals.⁶ The protocol, which teams used in the national project, hones in on interdisciplinary learning. Divided into three sections, the protocol begins with a set of questions designed to help teachers become attuned to each other and to the student work. By asking participants to first *notice*, then *value*, then *question* aspects of the student work being examined, the protocol helps slow down the usual rush-to-judgment that frequently happens when teachers discuss students' work. The middle section of the protocol emphasizes each of the four elements of interdisciplinary work: *purpose*, *disciplinary grounding*, *integration*, and *thoughtfulness*. The third section invites participating teachers to reflect on implications for teaching and learning, allowing the conversation to broaden out.

By the end of the first year, some teams found the protocol-structured conversations daunting. On several campuses, faculty were reluctant to have colleagues comment on their students' work so did not offer samples for collective examination; others did not see the value of just looking at student work, as an external assessor might do, without extensive commentary from faculty. For the majority of teams, though, following the protocol introduced a new dimension to team teaching—the *collaborative assessment* of student work. Team members' comments were grounded appropriately enough in disciplinary and/or field area expertise, but by listening to their colleagues' comments, project participants could see, and value, the multiple intersecting stages of learning that a piece of student work represents. This appreciation of students as “developing” readers, writers, and thinkers—within disciplines and across disciplines—focused collective attention on what is so difficult to recognize and assess: integrative learning.

In addition to the Collaborative Assessment Protocol, teams worked with the heuristic, Designing Purposeful and Integrative Learning. We had developed earlier versions of this heuristic once we realized a missing element in many learning community programs: assignments designed to foster integrative learning. The heuristic used in the national project invites individual faculty to answer this question: “what do you *most* want students to learn from your course, program or discipline?” Then faculty, in two's or three's, compare responses to discover if any of the aimed-for learning—the big ideas, modes of inquiry, intellectual traits, and habits of mind—are shared. With this common ground in mind, faculty design assignments tied to a public issue so students can apply what they are learning to contemporary problems or questions.⁷ Although this heuristic pre-dates Washington Center's work with Boix-Mansilla, the emphasis on planning assignments that explicitly connect learning from two or more courses, and then use that integrated learning to address an issue in the world, proved wholly compatible with the protocol.

Project Findings: Emerging Insights for Learning Community Practice

While campus practice continues to evolve in response to participation in this project and other initiatives, three important insights emerged from conversations at national project meetings, campus team reports, and colleagues' individual reflections.

The relationship between interdisciplinary and integrative learning

It is critical to define and distinguish integration and interdisciplinarity in order to achieve clarity and substance for a learning communities program.

~ University of Kansas

From their inception, learning communities have been associated with rich and generative possibilities for learning, including interdisciplinary learning. The aspirations for the learning made possible in learning communities resonate with Boix-Mansilla's (2005) description of why fostering students' interdisciplinary understanding is an essential learning outcome for graduates: “Whether we try to take a stance on the stem cell research controversy, to interpret a work of art in a new medium, or to assess the reconstruction of Iraq, a deep understanding of contemporary life requires knowledge and thinking skills that transcend the traditional disciplines. Such understanding demands that we draw on multiple sources of expertise to capture multi-dimensional phenomena, to produce complex explanations, or to solve intricate problems” (p.14).

However, as early as the first project meeting, we began to wrestle with the historical link between learning communities and interdisciplinary learning, especially as we looked at student work. Our collective observations led to debates about the learning we were trying to promote through learning

communities: to what extent was it interdisciplinary? Given the definition we were working with, interdisciplinary work depends upon disciplinary or field-specific grounding. We weren't sure we were seeing evidence of this grounding in students' work, especially first-year student work. At the same time, there were integrative elements in these samples of students' work which we all valued. We noticed that students were integrating personal experiences with academic modes of inquiry; they were using the "big ideas" from particular disciplines to rethink and question the meaning of their experiences; they were transferring writing skills from one class to another; they were trying out different ways of thinking in multiple class contexts; they were seeking out evidence, quotations, and ideas other than their own to make sense of questions and controversial issues; they were developing a sense of agency while discovering that their voice was one among many; they were making connections between their academic studies, work, and service learning projects, and much more.

Rather than trying to stretch the definition of interdisciplinary to encompass all forms of integration, we developed a working hypothesis that integrative learning is the larger category—involving the intentional bringing together of two or more perspectives for a purpose, while interdisciplinary learning—integrating insights or methods from two or more disciplines, is a specialized subset of integration. We agreed that integrative learning is something to invite in all learning communities; in some cases, this integrative thinking may take the more specific form of interdisciplinary thinking.

Clarity about this distinction was an important outcome of our work. Echoing the Association of American Colleges and Universities' 2007 report from the Liberal Education and America's Promise Initiative, we also concluded that integrative thinking is a fundamental habit of mind associated with doing quality intellectual work.

The power of examining student work collectively

The most significant learning for our team: more precise design of integrated assignments; clearer, more consistent focus on student work; deeper conversations; significant shift from parallel play to real integration; more purposeful articulation of disciplinary grounding.

~ LaGuardia Community College

Robust campus conversations about the kind of learning made possible in learning communities came about because we were focused on looking at students' work together. As the Iowa State team wrote in its final report, "grounding the conversation in student work turns attention to long-term, deep learning. This conversation frames assessment in relation to key artifacts and change over time."

The first section of the Collaborative Assessment Protocol is designed to help groups of teachers become attuned to one another and to the student work. The structured set of questions moves participants gently through the steps of first noticing, then valuing, and then raising questions about the work before moving on to more specific conversations. All the teams that used the protocol regularly reported that this attuning process made space for better conversations, instead of proceeding down a more usual rush-to-judgment path. The team from North Seattle Community College wrote that "the protocol prompted faculty to notice and appreciate the work before moving to a critical examination." One unanticipated result across teams was that more faculty were willing to share samples of their students' work with colleagues.

Teams also agreed that the focus on student work led to productive conversations about program outcomes and assignment design, and frequently these conversations led to changes in practice. For example, LaGuardia Community College noted in its final report that "professional development has been the most powerful effect of the project for us. It has helped us...increase the energy within teams, demand

a ‘product’ in terms of student work, and enabled us to reflect more carefully on the product.” The team from Iowa State University likewise wrote that “the process (of looking at student work using the protocol) offers a way to think about how to design learning experiences that align with intended learning outcomes.” The Temple University team wrote that they “all agreed that using the protocol has helped us better see what we’re asking students, as well as not asking students to do; not only to look at *what* we were teaching but *how* we were teaching; reflect on improvements to current assignments, i.e. more specific directions so students clearly understood what was expected and what skills were needed.”

The importance of disciplinary grounding

In working with colleagues, we have become evangelists for understanding disciplines as the basis for integration. A learning community team should begin by grappling with the types of disciplinary knowledge they would like students to gain...

~ Cerritos Community College

The most surprising insight emerging from this study was the importance of articulating much more precisely what exactly we want students to integrate: what *in particular* are students bringing forward to integrate, synthesize, and use to address a question or issue? The Collaborative Assessment Protocol led to this insight, because evidence of interdisciplinary or integrative work depends upon evidence of disciplinary or field-specific grounding. We discovered that disciplinary grounding needed to be more explicit in our assignment designs. As the team from Kingsborough Community College wrote, “purposeful integration requires both depth and breadth—depth from rootedness within a discipline—and breadth from the act of drawing connections across disciplines in order to see the bigger picture. Without disciplinary grounding, true integration cannot be realized.”

This question of disciplinary grounding became particularly vexing in the context of learning communities for beginning students—many of us puzzled over what it means, in the words of the LaGuardia Community College team, “to define disciplinary grounding in basic skills so that it is visible/discussable in student work.” As the Skagit Valley College team put it, how do we “describe and assess disciplinary grounding for courses with significant skill components, i.e., writing, speech, math, and reading? Since a significant proportion of our learning communities include a composition component, we would like to learn more about how this can be done and whether the integration is best understood as interdisciplinary.”

The term “disciplinary grounding” appears in the second section of the protocol, and at a second national meeting in spring 2007, Boix-Mansilla introduced project participants to a framework for describing disciplinarity. We broke into disciplinary and subject area groups, and used this framework to develop tentative descriptions of how we understood our disciplines and areas.⁸ In *Teaching for Understanding* (1998), Boix-Mansilla and Howard Gardner’s chapter on “What are the Qualities of Understanding?” describes four dimensions of disciplinary understanding: *knowledge*; *methods*; *purposes*; and *forms* with reference to case studies in specific disciplines. Within each dimension, expectations for naïve, novice, apprentice, and master learners are detailed (see Table One: Four Dimensions of Disciplinary and Field Expertise and Their Features).

The question of disciplinary grounding in the context of beginning level courses, especially in the areas of reading and writing, remained perplexing, perhaps because we approached the concept of disciplines from many different perspectives. Being attentive to what people with expertise know and can do—articulating expectations for master learners—has been particularly useful in situations where teachers have specialized field-expertise, but not necessarily formal disciplinary training (for instance, within developmental education or English language learning; this is also the case for many who teach reading and writing courses). Teachers in other fields and disciplines occasionally have a similar experience:

while they have an understanding of what expert practitioners in their fields do, because of evolutions in their fields, they are less comfortable giving an account of the “discipline.”

Not surprisingly, we discovered that campus conversations have been especially productive when faculty worked through the question of what expertise in disciplinary or field-specific practice entails by focusing on the following question prompts:

- *What an expert in the area knows:* Are we introducing students to the ideas that are central for us in our work in this field?
- *What an expert in the area does:* Are we asking students—even beginning students—to use the methods we use, framed in an appropriate, developmental way?
- *Why an expert does these things:* Are we creating possibilities for students’ work to be purposeful in the ways that our own work in this area is purposeful?
- *How an expert makes their work known to others:* Are we introducing students to a range of forms or “genres” for making their work public?

This shift in focus from disciplines as entities to expert practice in those fields is critical because the grounding for integrative assignments depends on this analysis. We want to make sure that the assignments students get in learning communities, especially in their first experiences of college, introduce them to the actual work of disciplines and fields. Too often, instructors inherit curricular “artifacts”—assignments, readings, projects—leading to a scrapbook approach to course design with few opportunities to redesign courses so that assignments introduce students to the evolving work of an area in the context of real-world issues and questions.

Assessing the four dimensions of disciplinarity is a precursor to designing integrative or interdisciplinary assignments, and teams recognized the importance of this. As the team from North Seattle Community College wrote, “we grew intellectually from (Boix-Mansilla’s) understanding of how interdisciplinary knowledge for students stems from an initial grounding of students in disciplinary language and modes of thinking.” Teams also recognized the challenge presented by this approach. As the LaGuardia Community College team observed, there is “tension between ‘disciplinary grounding’ and integration pieces in our work... when to emphasize one or the other—it sometimes feels like pulling in opposing directions.”

The challenge for helping learning communities achieve their promised integrative learning lies exactly here, in balancing the importance of disciplinary or field-specific grounding with the power of integrating ideas and approaches to address a substantive issue. Without grounding, integrative assignments too often lack substance; without integration, disciplinary or field-specific grounding too often lacks genuine purpose. Embracing this approach to designing and assessing quality learning in learning communities has been transformative for most teams.

Conclusion

The effect on our thinking has been enormous. Probably the most important insights are: (1) interdisciplinary integration needs to be grounded in the disciplines, which means that it is necessary to reinforce those specific aspects of knowledge and thinking skills relevant to the integration; (2) interdisciplinary work succeeds when it is purposeful, which has meant for us rethinking how to find connections between specific classes—they should serve to solve a specific problem rather than making connections as an abstract intellectual exercise; and (3) the best way to understand what’s going on with our

students is to do focused responses to student work using a protocol that guides attention to specific evidence of integration.

~Cerritos final team report

The Cerritos team gave voice to the experiences of many participating teams. From its inception, the National Project on Assessing Learning in Learning Communities was intended to address the gap in our collective understanding about the kind of learning that learning communities make possible.

The project has yielded richer results than we ever imagined, not the least of which is a shared conceptual framework and a common vocabulary for improving our collective practice. Our understanding of learning community practice evolved through this project because our conversations have been grounded in systematic assessments of students' work. To return to K. Patricia Cross's analogy: assessment has served as the zipper connecting teaching and learning in learning communities.⁹ We are grateful to our colleagues across the country, and to all of our students, for working with us to help learning community practice take a qualitative step forward.

Endnotes

¹ Washington Center is a public service center of the Evergreen State College's academic division. We work with two- and four-year postsecondary institutions in Washington State and across the country to establish and strengthen learning community programs aimed at improving student academic achievement.

² "Experiences that Matter." National Survey of Student Engagement 2007 Annual Report. Retrieved from <http://nsse.iub.edu/index.cfm>.

³ The National Learning Communities Project (2000-04), funded in part by The Pew Charitable Trusts, published a nine-title monograph series on learning communities by institution type and focus of work.

⁴ Participating two-year campuses included: Broward Community College, Cerritos College, Chandler-Gilbert Community College, Everett Community College, Garrett College, Holyoke Community College, Kingsborough Community College, LaGuardia Community College, Skagit Valley College, and Yakima Valley Community College. Four-year campuses included: Clayton State University, College of Charleston, Iowa State University, Kennesaw State University, Sacramento State University, Temple University, University of Kansas, University of Washington- Bothell, and Westminster College.

⁵ These assignments are available at <http://www.evergreen.edu/washcenter/project.asp?pid=78>.

⁶ See Boix-Mansilla's article, "Productive Shifts: Faculty Growth through Collaborative Assessment of Student Interdisciplinary Work," in this journal issue.

⁷ In a Washington Center Occasional Paper (Malnarich and Lardner, 2003) we describe in detail the assumptions behind our design; from its inception, the heuristic has been based on the premise that "what a student knows and can do" is a more accurate reflection of what is learned than a focus on what a teacher does.

⁸ These notes are available at <http://www.evergreen.edu/washcenter/project.asp?pid=78>.

⁹ Cross used this analogy in a speech presented to the conference on *Transforming Campuses into Learning Communities*, University of Miami, January 9, 1998.

References

- American Association of Colleges and Universities. (2007). *College learning for the new global century*. Report from the National Leadership Council for Liberal Education and America's Promise. Washington D.C.: American Association of Colleges and Universities.
- Boix-Mansilla, V. (2005). "Assessing student work at disciplinary crossroads." *Change*, 37(1), 14-21.
- Boix-Mansilla, V. & H. Gardner. (1998). "What are the qualities of understanding?" In *Teaching for understanding*, M. Stone Wiske (ed). San Francisco: Jossey-Bass.
- Lardner, E., & Malnarich, G. (2008a). "A new era in learning-community work: Why the pedagogy of intentional integration matters." *Change*, 40(4), 30-37.
- Lardner, E. & Malnarich, G. (2008b). "Sustaining learning communities: Moving from Curricular to Educational Reform." *Perspectives*, Winter: 20-23.
- Malnarich, G. & Lardner, E. (2003). "Designing integrated learning for students: A heuristic for teaching, assessment, and curriculum design." *Washington Center Occasional Paper*, Winter No. 1. Olympia, WA: Washington Center for Improving the Quality of Undergraduate Education.
- Project Zero. (2001). *The evidence process: A collaborative approach to understanding and improving teaching and learning*. Harvard Graduate School of Education.
- Shulman, L. (1989). "Toward a pedagogy of substance." *AAHE Bulletin*, American Association of Higher Education. June: 8-10.
- Shulman, L. (1999). "Taking learning seriously." *Change*, July/August: 10-17.
- Smith, B., MacGregor, J., Matthews, R., & Gabelnick, F. (2004). *Learning communities: Reforming undergraduate education*. San Francisco: Jossey-Bass.
- Taylor, K. et al. (2003). *Learning community research and assessment: What we know now*. National Learning Communities Project Monograph Series. Olympia, WA: The Evergreen State College, Washington Center for Improving the Quality of Undergraduate Education, in cooperation with the American Association for Higher Education.