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## Consortial Support of Faculty Work On Student Learning

In January of 2008 the Great Lakes Colleges Association (GLCA) submitted a proposal to the Teagle Foundation to create a program that would support purposeful experimentation in pedagogy in undergraduate courses. Teagle's premise in requesting proposals for such consortial projects derived from the observation that a great deal of research on how learning occurs had taken place in recent decades; the foundation was interested in fostering projects in which faculty members would apply findings from the research on learning to undergraduate teaching. With the help of the academic deans of our member colleges, GLCA identified a group of faculty members with an interest in the prospect of such a program. Many of those identified also brought a firm grounding in the research on different aspects of learning and its implications for undergraduate teaching. A series of conference calls with these interested faculty members provided GLCA with the structure and substance of a proposal we submitted to the Teagle Foundation to create what we call the GLCA Pathways to Learning Collegium. One of the structuring principles our program adopted was to use a comparative approach, in which one method of teaching and learning would be compared to another that employed some variation in technique derived from a principle of learning from research in cognition or other aspects of human learning. The approach we adopted asked proposers to employ an assessment technique that is appropriate to the course content and offers a meaningful gauge of the learning component the project seeks to compare from its two approaches.

At the core of Teagle's request for proposals on this subject was a desire to increase the visibility and impact of efforts to improve teaching and learning in undergraduate courses. The idea of centering such a project in a consortium of smaller liberal arts colleges was to heighten the prospect that conversations about these matters could extend not just within but also across smaller institutions in which effective teaching is a strong common value.

### Identifying Salient Principles of Learning

When GLCA learned that it had received a grant for this program convened a formative meeting of 14 faculty members from across our member colleges<sup>1</sup> in May 2008. Our central goal was to engage scholars and researchers (mostly cognitive psychologists) in identifying a limited set of core research-based principles that are closely related to the learning objectives of liberal arts colleges and could provide meaningful frames of reference for those seeking to design, implement, and assess alternative pedagogy. We conducted the event as a two-day seminar in which participants made presentations on research findings. This structure allowed participants to pool their considerable knowledge and gain a deeper collective understanding of key elements of learning that have bearing on undergraduate pedagogy. The series of presentations and

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<sup>1</sup> GLCA's member colleges are Albion, Allegheny, Antioch, Denison, DePauw, Earlham, Hope, Kalamazoo, Kenyon, Oberlin, Ohio Wesleyan, Wabash, and Wooster.

exchanges provided the basis for a major document that describes our Collegium and requests proposals for research-based pedagogy innovations. Among the principles of learning that paper highlights as having particular relevance in liberal arts education are:

- *Increasing the transfer of knowledge* – increasing students’ ability to transfer insights and principles derived from one disciplinary or knowledge context to another.
- *Building foundations of expertise* – developing a well-honed capacity to recognize key patterns in new information and to understand new problems in the context of conceptual principles that serve as aids to understanding.
- *Strengthening long-term retention of knowledge* through a process that involves repeated engagement and application of content within a field of knowledge, as opposed to the intense singular engagement that often characterizes rote memorization and content recitation.
- *Metacognitive strategies: Instilling habits of structured reflection* – the development of a reflective capacity that enables a student to stand critically apart, reflect on particular strategies he or she has applied to understand key information and concepts, and adjust individual learning strategies that prove inadequate to effective learning.
- *Engaging the social contexts of learning* – encouraging students to work together as members of a learning community, to become agents of one another’s’ learning and thus to take active responsibility for the subject matter, while increasing a student’s sensitivity to individual and cultural diversity.
- *Engaging and strengthening different learning processes* – providing opportunities to engage with academic content in different ways (analytical, creative, abstract, concrete, kinesthetic, auditory, etc.).

While this set of principles is not exhaustive, they each represent a research-based aspect of learning that our faculty group found particularly interesting and relevant to the goals of a liberal arts education. More detailed descriptions of these learning principles can be found on GLCA’s web site: [http://www.glca.org/Programs,%20Groups%20&%20Services/Programs/?p\\_id=310](http://www.glca.org/Programs,%20Groups%20&%20Services/Programs/?p_id=310) (this page provides links to several documents describing elements of the GLCA Collegium).

An RFP based on these principles, and outlining good research practice, was developed and circulated to faculty on GLCA campuses. A panel of five judges was appointed for proposals we receive, including three faculty members of our core design group and the co-directors of GLCA’s Collegium.

### First Projects

In the summer of 2008 we published our Request for Proposals on the GLCA web site and received three proposals for pilot projects, two of which were approved for the fall semester of 2008.

One project, from Tom Ludwig of Hope College, tested the principles related to *building foundations of expertise*. Two approaches were used: constructivism, (which holds that students learn by constructing internal representations of the concepts and principles), and learning by

teaching (which affirms that student motivation and understanding are enhanced when students teach concepts and principles to other students). The project compared two traditional sections of introductory psychology with a smaller experimental section that met in a computer laboratory rather than a standard classroom.

A second project, from Claudia Thompson of the College of Wooster, employed explicit instruction and use of *metacognitive strategies* with the goal of improving learning and reflection about learning in college students enrolled in introductory psychology classes. Claudia provided specific instruction and modeling on aspects of metacognition. This instruction was combined with specific student activities, including one-minute reflection papers to evaluate understanding, application, and analysis of important concepts; “test debriefing,” in which students examined which questions they missed and why; and small group metacognitive reflection activities to encourage students to observe their own sensations, thoughts, and feelings related to class readings.

Tom Ludwig and Claudia Thompson are both participating in this SoTL conference, reporting on results from their pilot projects. In the course of their work each gave a preliminary account of their progress. Both were turning up interesting first results.

- For the project on *building foundations of expertise*, Tom Ludwig wrote: “Assessment results as of Week 10 suggest that eliminating the traditional lectures did not reduce the content comprehension of students in the alternative pedagogy group. By freeing class time to be used in collaborative projects, this constructivist approach appears to have increased student motivation and engagement in the class, as well as nurtured skills that will be very useful for these students in the remainder of their college courses. In addition, the alternative pedagogy group included many positive comments about the value of working on team projects, presenting their projects in class, and learning from the other teams.”
- For the project on the use of *metacognitive strategies* with the goal of improving learning and reflection about learning in college students enrolled in introductory psychology classes, Claudia Thompson wrote: “The major hypotheses were that explicit instruction in metacognitive strategies and participation in related student activities would lead to *improved performance* on the chapter tests that provided the specific context for these methods of metacognitive enhancement, and also to a heightening of students’ *metacognitive awareness* of their own learning processes. Preliminary findings suggest that students’ awareness of metacognitive principles and strategies increased during the semester. But group performance on the chapter tests did not change dramatically in spite of students’ increased metacognitive awareness. Further analyses will determine whether learning for some individual students was aided by metacognitive strategies.”

In fall 2008 We received six proposals for projects to be undertaken in the winter 2009 semester, four of which were approved by the judging panel.

- To a professor in the Department of Geology at the College of Wooster, for a project to introduce peer instruction with Classroom Response Systems in an Oceanography course.
- To a professor in the Department of Biology at DePauw University, for a project to explore the impact of concept mapping to stimulate student reflection and cognitive growth.
- To a professor in the Department of Modern Languages and Literatures at Kenyon College, for a project to explore the impact of a learner-centered, problem-solving approach to teaching a seventeenth-century French literature course.
- To a professor in the Department of Psychology at the College of Wooster, for a project to examine the role of deliberate practice as a means of advancing statistical expertise in a psychological statistics course.

### Next Steps

We expect to attract a greatly expanded set of proposals for projects to be implemented in the fall of 2009. GLCA's academic deans have provided us with lists of faculty members on their campuses with a particular interest in improving pedagogy. One of the project directors will visit every member college in the winter/spring semester and will meet with as many such faculty members as possible to explain the program and encourage proposals for introducing alternative pedagogies that are based on learning research. We are also taking steps to build extended connections with a broad community of faculty members interested in improving pedagogy in liberal arts institutions. Participating in this SoTL conference is one such means of engaging broadly with the community of liberal arts faculty members interested in improving undergraduate teaching and learning.

The total number of faculty members across GLCA's member colleges who have had direct involvement with our Collegium to date is 22: the 14 participants of our original Collegium seminar, and eight additional faculty members who have submitted proposals for alternative pedagogy projects (two of ten proposals submitted were from faculty members who also participated in our original program design seminar). Faculty members from eight of GLCA's member colleges have participated (DePauw, Hope, Kalamazoo, Kenyon, Oberlin, Ohio Wesleyan, Wabash, Wooster). The academic disciplines of our Collegium participants encompass the natural sciences (biology, geology), social sciences (economics, psychology), and humanities (modern languages and literature).

One of the challenges our project has faced from its inception is to encourage the participation of faculty members who are not specialists in the literature of learning but nonetheless have an interest in improving pedagogy in their disciplines. Members of our core faculty group have served as advocates and recruiters for the Collegium on their own campuses, in many cases helping faculty members become acquainted with key concepts and literature citations from the research on learning. In some cases proposals that were not accepted have led to telephone calls and other forms of feedback between members of our judging panel and faculty proposers. Indications are that these exchanges have led proposers to rethink aspects of their project with the intention of resubmitting a revised proposal for a later semester. The feedback our judges provide on proposals – successful as well as unsuccessful – becomes a basis for learning, for sharpening the design and execution of pedagogical projects, and for rich collegial exchanges

among faculty members of different colleges and disciplines with a shared commitment to improve teaching and learning.

### Other Issues

From the standpoint of project management we have noted two research-related issues:

Human subject considerations can be significant factors even in research that pursues a goal of improving teaching. Discussions of some proposals have raised questions of whether involving different sections of a given course in an experiment using different pedagogical methods could raise ethical concerns; by engaging one group in what may be a superior pedagogy, does a faculty member deprive another student group of the more effective approach to learning? Are there ethical problems in a faculty member having different expectations of students in different sections of the same class?

We knew that it would be very difficult to make meaningful comparisons between a course of identical content taught by faculty members across college campuses, or even by two different faculty members teaching the same class within the same department. However, this can go beyond simply issues of the appropriateness of various approaches to statistical comparison and control. An abortive attempt by a faculty member to engage in partnership with his departmental colleague in a Collegium project yielded pointed differences in how an introductory course should be taught, with the result that the proposal they had planned was never submitted. For this reason, it is likely that most of our alternative pedagogy projects will center on individual faculty members teaching two sections of a given course and trying different approaches in different sections.

### Looking Ahead

The GLCA Pathways to Learning Collegium has fostered intensive discussions among faculty of several academic disciplines across our member colleges on the subject of learning, and it has given rise to some promising projects that explore the implications of learning research for teaching in undergraduate classes. In the most general sense, this is a program that seeks to connect theory with practice – to apply the findings of research on learning to the curriculum and pedagogy of liberal arts colleges. The small community of interested faculty members created through this project is one that we hope to sustain and grow in the months and years ahead as more faculty members seek to design an alternative approach to teaching, assess the impact on student learning, and quite possibly make changes in their modes of teaching that contribute to more effective learning in their students. To the degree that GLCA can foster purposeful exploration of this kind and build connections among faculty members with similar interests, we hope to make sustaining contributions to increasing the quality of undergraduate teaching and learning across our member colleges.

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