Financial aid is available, but it often comes too late.

Whether perceived or real, excessive college expenses lead many low-income and disadvantaged public school students to opt out. They don’t use their high school years to prepare for the academic, social, or financial demands of college.

But beginning this past November, 2,500 ninth-graders attending one of 18 Milwaukee schools were promised $12,000 each to pay for college, given that they met certain requirements.

The evaluation of this “promise program” is directed by UW-Madison education professor Douglas Harris and colleagues,* the first U.S.-based randomized trial of such a program.

In general, promise programs commit college funds to low-income students who meet specified requirements. About 75 promise programs operate around the country, and more appear each year. Harris and colleagues are studying The Degree Project to test the effectiveness of the approach.

Harris and colleagues are analyzing the program’s effects on students’ academic preparation, social capital, and perceptions about college affordability. These effects will be measured through students’ high school years and on their college entry.

Harris says a promise program can influence a student’s decision making. Early commitment programs increase the real and perceived affordability of college and clearly communicate that college is possible. They aim to improve academic preparation and social capital during high school—making college more accessible.

Available research provides little guidance on the mechanisms through which financial aid operates. But Harris’s study provides

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Whether perceived or real, excessive college expenses lead many low-income and disadvantaged public school students to opt out. But a sample of students attending Milwaukee’s public ninth-grade schools were promised $10,000 to pay for college, given that they met certain requirements. They’re participating in a ‘promise program’ evaluation project directed by Douglas Harris and colleagues, the first U.S.–based randomized trial of such a program.

In this month’s issue you’ll also read about computer-supported role-playing games that have the potential to develop higher-level thinking skills that students will need when they enter the workplace. UW–Madison researcher David Hatfield investigated the growth in student learning as they engaged with a computer-supported role-playing game called science.net.

Diana Hess says the need for students to discuss controversial political issues in school is increasingly important. Although schools are good venues for discussing controversial issues, students need to be taught how to debate effectively. A recent study involved 1,000 students and their teachers from 21 high school social studies classes.

Christine Pfund says the success of student research projects depends largely on the relationship between the student and the research mentor. Pfund co-directs a training seminar to help mentors become more effective. Topics cover different mentoring styles and include strategies for developing mentees’ confidence, independence, creativity, and communication skills.

a rigorous test of the considerable potential of promise programs to help low-income students succeed in high school and college.

There is no explicit income requirement for students to participate in the The Degree Project promise, but the low income level of most families in Milwaukee Public Schools (MPS) makes the program implicitly need-based. To receive the money, students must meet high school academic requirements and then attend college.

The program funder and operator, Great Lakes Higher Education Corporation, has decades of experience with college access programs. Over the last six years Great Lakes has provided more than $58 million in funding and other support to programs seeking to increase college access for disadvantaged groups in Wisconsin, including MPS.

At least 15 of the roughly 75 promise programs operating nationally have some sort of merit or performance requirement, based on GPA, class attendance, SAT/ACT scores, and class rank/percentage. In terms of target population, requirements, and scholarship amounts, GLIMPS is most similar to district programs in Denver, Kalamazoo (Michigan), New Haven, and Pittsburgh, and statewide programs in Indiana, Oklahoma, and Washington.

*Harris’s colleagues on this project include Elaine Allensworth, Larry Orr, and Bradley Carl.

The Degree Project:  https://degreeproject.com/

Great Lakes Higher Education Corporation:  https://www.mygreatlakes.org/
For students in the sciences, it’s important to have positive research experiences. The success of undergraduate or graduate research experiences depends largely on the relationship between the student and the research mentor.

Good mentors work to improve the efficiency and effectiveness of their mentoring. They want to improve their mentees’ research productivity and reduce their own frustration.

A training seminar based on the published curriculum, Entering Mentoring, offered by the Delta program at UW–Madison http://www.delta.wisc.edu/ offers new mentors a chance to get off on the right foot and experienced mentors a chance to share their wisdom. Delta program co-leader Christine Pfund says the weekly one-hour seminar discussions focus on different mentoring styles and strategies for developing their mentees’ confidence, independence, creativity, and communication skills. Faculty and staff facilitate discussions, using a format based on collaboration and collective problem solving. Participants read articles and case studies, write biographies of their mentees, compare their goals with those of their mentees, explore time management strategies, and write mentoring philosophies. The seminar develops cultural competency in mentors and their mentees by including diversity issues. Rather than adding to the time participants spend mentoring, this seminar improves their efficiency and effectiveness.

An adapted version of this curriculum, UW Clinical and Translational Research Mentor Training, was implemented for mentors of clinical and translational researchers. Pfund and colleagues at the UW Madison Institute for Clinical and Translational Research (ICTR) are testing the effectiveness of this mentor training curriculum via a randomized controlled trial at 16 universities with academic medical centers. Fifteen of the 16 institutions that include UW Madison have been awarded the prestigious Clinical and Translational Science Award (CTSA) by the National Institutes of Health. The eight-hour curriculum, led by local facilitators focuses on six key mentoring competencies: (1) maintaining effective communication between mentor and mentee; (2) establishing and aligning expectations between mentor and mentee; (3) assessing mentees’ understanding of scientific research; (4) addressing diversity within mentor-mentee relationships; (5) fostering mentees’ independence; and (6) promoting mentees’ professional career development. Participants from the multiple sites evaluate the impact of the training. Mentors and mentees in the control and intervention groups are assessed prior to, and after, the training.

Pfund says preliminary survey results are promising: 94% of facilitators said they would lead the training again; 94% of experimental mentors described the eight hours of training as time well spent; and 91% would recommend the training. Initial feedback also suggests an interest in greater curriculum flexibility to accommodate the diverse groups of mentors in the spectrum of clinical and translational research. Wider dissemination of these mentor training materials and other mentoring resources will be available via an online mentoring resource currently being developed by Pfund and colleagues at UW ICTR.

More about the UW–Madison Delta program: http://www.delta.wisc.edu/

About the UW Institute for Clinical and Translational Research: https://ictr.wisc.edu/

“A lot of people have gone further than they thought they could because someone else thought they could.”
—Zig Ziglar
Learning to Think Like a Professional

In a normal day, an urban planner testifies before a city planning commission, develops land use plans for a blighted industrial area, and uses GIS to consider proper use of ecologically-sensitive areas.

Two blocks away, in the newsroom of a metropolitan daily, a journalist arranges a meeting with the mayor’s staff, fact-checks a crime story, critically evaluates a school board report, and edits an interview she conducted yesterday.

Professional practice demands not only knowledge of facts and skills but also the ability to make connections among them. It requires adhering to a set of professional norms. Urban planners and journalists reach conclusions and justify their actions in the context of complex, real-world problem solving. Their daily work requires using several aspects of expertise in coherent and patterned ways.

UW–Madison researcher and former graduate student David Hatfield uses Epistemic Network Analysis (ENA) to measure how people develop higher-level thinking skills (see box, opposite).

As the basis for a recent study he used a computer-supported role-playing game called Science.net. In the game students take on the role of journalists-in-training. They learn to see story possibilities in broad topic assignments, they pitch story ideas, interview experts, and write stories to be published on the game’s web site—all activities modeled on professional practice.

In Hatfield’s study, mentors acted as editors and provided feedback on student stories, working within the standards of the journalism profession. These mentor-editors gave students suggestions on their stories in terms of what worked, what did not work, and why. In this case, however, mentors were graduate students in education, not professional journalists. This study found that through Science.net even these non-professionals were able to enact journalistic feedback that was measurably similar to that given in actual journalism practica.

What was measurably similar was the patterns of knowing, doing, being, caring, and justifying. These patterns can be called their epistemic frames, building on work by David Williamson Shaffer and others.

Hatfield’s study showed that the development of epistemic frames can be measured and tested. Using ENA, Hatfield determined that mentor feedback from a professional practicum was similar to that in a computer game attempting to reproduce that experience (see Figure opposite).

ENA analysis showed that the game Science.net did reproduce the kind of mentor feedback from the professional journalism practicum on which it was modeled.

And as a result of playing the game, students demonstrated significant learning gains in journalism knowledge, skills, values, identity, and epistemology. In other words, Science.net gave players a better understanding of the journalism epistemic frame and it helped players integrate those elements to begin acting more like professional journalists. These learning gains continued to be present months after the game was over.

Hatfield’s study extends the research on game-based learning environments. It shows that by reproducing professional practicum activities by players and reflective feedback by mentors, professional role playing games do in fact help students begin to develop the epistemic frame of a profession, even if the mentors involved are not professionals themselves.

Another important finding: New analytic tools like ENA can measure the discourse of multiple game players in different roles. That’s a big plus, given the importance of mentors
This figure shows mentor copyediting feedback from 3 sources: a journalism practicum, a non-journalism comparison practicum, and the Science.net game. Results suggest the game mentor copyedit feedback measurably reproduced this important professional practice from the journalism practicum.

in professional role playing games and the increasing prominence of social gaming featuring diverse roles.

Now we know that the connections among a profession’s particular ways of knowing, doing, being, caring, and justifying—the epistemic frame—can indeed be measured. That means designers of learning environments now have a more rigorous basis for designing these environments to better prepare young people for the complex demands of their careers.

Learning to think like a professional can help young people develop important abilities, and ENA can help us know when they do.


For more detail on the specific technique used see the paper, The right kind of telling: an analysis of feedback and learning in a journalism epistemic game. View online or download the pdf at http://epistemicgames.org/eg/the-right-kind-of-telling-an-analysis-of-feedback-and-learning-in-a-journalism-epistemic-game/.


You can think of epistemic frames as cognitive networks. Different elements within the frame include the particular skills, understandings, identities, values and epistemologies of a profession.

These elements can be represented as nodes in the network. Patterns of connections between specific aspects of expertise constitute the links between these nodes. Epistemic Network Analysis (ENA) techniques measure different aspects of these networks. For example, which particular combinations of nodes are prominent? What are the similarities and differences between the networks of different individuals, or between different groups, or between an individual’s network at different points in time?

ENA analysis is similar to social network analysis. But rather than focusing on the patterns of relationships among people, ENA focuses on the patterns of relations among ideas (in particular, elements of discourse). And rather than focusing on disciplinary knowledge itself, ENA focuses on the patterns of relations between that disciplinary knowledge and the other aspects of expertise that professionals mobilize in the complex work of their daily practice.

ENA analysis can also show the changes across elements and linkages at different points in time, and show patterns of such linkages between different individuals and settings.

By quantifying the patterns of connections between the elements within epistemic frames, ENA analysis provides a new way to measure complex thinking and problem solving. One context for applying the principles of ENA lies in educational game environments as described in this story.
If you watch TV political news coverage, listen to talk radio, or read blog comments, you’re exposed to lots of opinions. It’s often heated, and often uncivil. Have we lost the capacity for thoughtful discussion?

Because of the increasingly vitriolic and negative tone of much of the political discussion in the United States, it’s easy to understand why classroom teachers might shy away from leading their students in discussions of hotly contested political issues. If the discussion is not well managed, students’ feelings can get hurt. Angry parents might call. School staff might come under fire.

But if young people don’t learn the elements of high quality discussion of political issues in school, where will they? UW–Madison education professor Diana Hess says the need for discussing controversial political issues in school is more important than ever.

Research shows that adults in the United States increasingly socialize with only like-minded people. Their friends tend to be ideologically homogeneous. Such circles don’t offer people much opportunity to engage with perspectives different than their own. In a democracy where informed decision-making is dependent on the rigorous analysis of multiple and often competing perspectives, that’s a dangerous trend.

We need to be taught how to participate effectively in discussion, Hess says. It’s not a natural skill. It takes lots of practice. Schools are good venues for discussing controversial political issues for a number of reasons.

First, schools offer courses in social studies, English, history, and civics, where controversial issues fit naturally. Second, students are more likely to encounter diversity in school than elsewhere. Coming from many neighborhoods, their classmates bring different ideological, religious, and social perspectives. Third, discussing and teaching controversial political issues offers high payoffs. Students who engage in well-managed discussions learn how to make and defend an argument and analyze others’ positions in constructive ways. They also develop a better understanding of important knowledge, especially content that is difficult. High-quality discussion requires and produces intellectual rigor.

Yet in many schools it’s difficult for teachers to engage in this kind of teaching. Barriers include teachers’ lack of preparation, recent trends in schooling that emphasize low-level knowledge, and community climates that hinder consideration of differing viewpoints.

For years, Hess has written about the science and art of leading classroom discussions of controversial issues. In an early study, Hess learned from a particularly effective teacher who used a format called Town Meeting. In large-group discussions, each student assumed the role of a person with a particular perspective on a contentious issue. The teacher encouraged students to represent positions that differed from their own. She also made sure that the roles covered a wide distribution of viewpoints.

The teacher began by showing students a videotape of an excellent Town Meeting from the previous year. She occasionally stopped the video and pointed out exemplary contributions. She brought particular attention to how students showed one another respect by listening carefully and not engaging in personal attacks. She noted how students built on one another’s comments, used one another’s names and respectful terms for direct address, asked others to participate, stayed in character, thought on their feet, and used facts as the basis for their statements.

During the Town Meetings the teacher assessed students’ content knowledge of the issue, their role portrayal, and their effectiveness as a discussion participant. Effective participation includes respectful listening, asking questions, and providing more elaborate responses.

“Without dialogue, self-government cannot exist.” —Paulo Freire
She made sure her students understood that “participation” does not simply mean the number of times they spoke.

**Researching Political Discussion in the Classroom**

In 2005, Hess began directing the Discussing Controversial Issues study to investigate what influence the discussion of authentic political issues has on what students learn and whether they participate politically as adults. Paula McAvoy joined the team in 2006, and is the co-author of a book about the study that will be published in the fall. The sample includes 1,001 students in three states (Illinois, Indiana, and Wisconsin), collected from 21 schools and 35 classrooms that differ pedagogically, geographically, ideologically, and by social class. Two research questions guide the study:

1. How do high school students experience and learn from participating in social studies courses that emphasize the discussion of controversial political issues?

2. Do such discussions influence students’ political and civic participation after they leave high school? If so, what are the pathways to participation?

This is one of the largest democratic education studies in the nation, unusual because it is a longitudinal study that includes robust qualitative data from teachers and their students and follow-up data from students after they have left high school. The research has been funded by grants from the McCormick Foundation, the Carnegie Corporation of New York, the Center for Information and Research in Civic Learning and Engagement, the Choices for the 21st Century Education Program at Brown University, and the Spencer Foundation.

**It is possible to talk about controversial issues in civil and productive ways so that students bring a healthy amount of passion to the classroom without treating one another harshly.**

Findings show that engaging students in discussions of political controversy is pedagogically powerful and challenging. Hess and McAvoy sorted classes into three categories: “Best Practice” (those that prepare students for discussion, use political controversy, and encourage students to talk to each other, not just the teacher); “Interactive” (classes that use discussion, but were more teacher-centered than Best Practice) and “Non-Discussion” or lecture-based classes. When interviewed, students overwhelmingly report that they find “best practice” classes highly engaging and valuable to their learning. Further, students in these classes are more likely to report an open classroom climate, appreciate the importance of listening to multiple perspectives, show an increased interest in politics as a result of the class, and are consequently more likely to engage in political talk outside of the classroom.

Hess and McAvoy also found that teachers make very different decisions about some ethical issues related to teaching students how to engage productively with controversy in the classroom. For example, some teachers share their political views with their students, and some do not. Some teachers avoid certain issues, such as same-sex marriage and affirmative action, for fear of making students uncomfortable, while others tackle these issues head on.

In their forthcoming book, *The Political Classroom: Evidence and Ethics in Democratic Education*, Hess and McAvoy present several cases of teacher practice to show both the academic and political effects of controversial issues discussions and then use these cases to discuss how teachers can make well-reasoned decisions about the ethical dilemmas they face when bringing political controversy into the curriculum.

The research has convinced Hess that “teacher skills and enthusiasm are key, and that successful discussion teachers are made, not born.” Virtually all the teachers who are the most skilled at this form of ambitious teaching reported participating in professional development programs that focus on how to teach with controversial political issues discussion. But there are currently not enough of these programs—especially at the school level. This may well account for why many teachers simply do not know how to teach their students how to engage in high quality issues discussion, even when they desire to do so. Responding to this need, Hess and McAvoy are using the findings from the study to design and research a new approach to professional development that will use both “evidence and ethics” to help teachers build the skills they need to engage their students in rich political talk.

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[Adapted from the article, “Promoting Respectful Schools,” *Educational Leadership* (69, 1), Sept. 2011, pp. 69–73.]