Madison Initiative
Engage: Transforming Teaching Through Technology (T^4)
FY10

Purpose of T^4
The Transforming Teaching Through Technology (T^4) program, referred to as Engage, supports teaching excellence at UW-Madison. It aims to transform teaching and learning by pilot-testing technology-enhanced teaching and learning practices that are grounded in higher education literature. Engage’s programs efficiently explore, evaluate and disseminate solutions to campus-identified teaching and learning challenges. Engage partners with faculty, instructional staff, technology support staff, students, Libraries, the Writing Center and other academic support groups to meet these challenges through 1) monthly communities of practice events where faculty share their projects’ successes and challenges, and 2) project teams which include the instructor, a learning consultant, an evaluation specialist and other project roles as needed. Engage goals are aligned with important campus initiatives including the Campus Strategic Framework, the IT Strategic Plan, and High Impact Teaching Practices.

Engage works primarily through implementing two campus wide programs, Innovation and Adaptation. These programs develop broadly applicable learning/teaching methods of good practice, measure faculty and student satisfaction, and create on-the-ground ongoing collaboration with campus academic and technology partners. A Faculty Advisory Group recommends goals and research questions, reviews outcomes, and guides the program. See http://engage.doit.wisc.edu for more information.

What Level of funding is needed for the years to come?
A total of $550,000 is needed annually to support this program. This allocation is matched by funding from the Division of Information Technology at $200,000 annually.

1. Innovation Program $420,000
The Engage Innovation program looks beyond current uses of existing technologies and pedagogies to find potentially transformative approaches that could have a significant impact on solving difficult teaching learning and assessment challenges at UW-Madison.

Engaging to Learn: Simulations & Games projects for 2010 are:
- “Point, Counterpoint” and “Harmony Mixer” Music Games — Jamie Henke, Alan Ng, Music;
- “Cool It: An Interactive Learning Game for Cryogenics” — John Pfotenhauer, Greg Nellis, Mechanical Engineering;
- “Madison Transportation Simulator” — Jessica Guo, Civil & Environmental Engineering;
- “Wisconsin Speech Chain Online (WiSCO), Pt 2: Mapping Speech Patterns” — Tom Purnell, Linguistics; Joe Salmons, German; Eric Raimy, English; Mark Livengood, Geography;
- “Humans vs. Bacterial Antibiotic Resistance and Horizontal Gene Transfer” — Teri Balser, Soil Sciences;
- “Commodity Risk Management” - Liz Henry, Randy Fortenbery, Agricultural Economics;
- “Wolf Hunting Policy: Gaming with a Purpose” - Adrian Treves, Nelson Institute for Environmental Studies;
- “A Case ScenarioBuilder w/Critical Reader & SimDAT” – Brad Hughes, Melissa Tedrowe, The Writing Center.

For additional information on these projects, see http://engage.doit.wisc.edu/sims_games/roundtwo awardees/
See the appendices for more information on campus interest in using Engage’s games and simulations to address difficult challenges in teaching and learning.

2. Adaptation Program $130,000
The T^4 Engage Adaptation Program applies mainstream technologies and tools to address common teaching and learning challenges at UW-Madison, and evaluates and disseminates methods of good practice for their use. The UW-Madison 2010 Academic Technology Survey identified “Disseminating best practices with technology” as a key focus for academic technology efforts. The program helps faculty make sense of the large number of technology tools on the market, and delivers broadly applicable,
pedagogically sound solutions that are easily integrated into courses. Survey data is gathered from faculty and students at the beginning and end of the courses and methods of good practice are derived from it.

In FY 2010, the Adaptation program focused on disseminating methods of good practice for effectively facilitating technology-supported collaborative group work projects for students. For details, see http://engage.wisc.edu/collaboration/index.html. Engage websites continue to receive a large number of hits several years after the completion of the program. We know from annual surveys that faculty and instructors who participated in an Adaptation program tend to feel more confident teaching with technology and continue to explore new ways of using it to improve their courses.

The new 2010/2011 program theme explores the development and assessment of student-created digital media-based assignments. At the same time, consultants continue to work with faculty (non-awardees) on integrating technology-supported collaborative group work projects into their class activities.

Faculty Advisory Group
The Engage program is guided by a multi-disciplinary Engage Faculty Advisory Group that reviews and approves proposed programs, themes, and projects. This group meets 9-12 times per year to explore campus teaching and learning needs, review project proposals, learn about new technologies, communicate methods of good practice, identify campus partners, ensure efficiency and evaluate program progress.

Staffing
T4 funding supports the full-time equivalent of 8.5 academic staff and project assistants. Project assistants are a key part of the success of Engage. The project assistants are drawn primarily from the School of Education for their knowledge of teaching, learning and assessment, and from the School of Journalism for their skills in writing and disseminating program outcomes.

Dissemination & Sustainability
Engage project outcomes are delivered to campus, national and international audiences through conference presentations and journal articles. On campus, Engage solutions are customized and supported by discipline-specific technology support staff for their faculty and students. Engage Innovation projects aim to design, develop and evaluate prototype ideas in order to prepare instructor participants to apply for external funding from NSF, NIH, FIPSE and discipline-specific funding for continued exploration, evaluation and development. See appendices for examples.

Evaluation and Assessment
Evaluation and assessment are key elements of the Engage Program. A DoIT evaluation specialist and team develop evaluation and assessment plans for all Engage projects and facilitate IRB compliance by program participants. For Adaptation, students and faculty for each project take pre- and post- tests that help assess learning and evaluate satisfaction with the technology-supported approaches. For Innovation Awards, evaluation methodologies are developed and tested. More information is available at http://engage.doit.wisc.edu/evaluation/award_eval/index.html

T4 impact on teaching and learning FY00- FY10*
Courses at UW-Madison employing T4 developed solutions to teaching challenges: 851
Student enrollments in these courses: approx. 49,455
As of April 30, 2011, add an additional 21 courses and 776 students to these totals for the Digital Media Assignments Adaptation Award currently in its implementation phase.

*These numbers reflect only those courses and students involved directly in Engage programs, and do not include repeated or additional courses to which instructors or students may have applied their Engage learning and experience.
APPENDIX I

1. Case ScenarioBuilder generates positive feedback from both faculty and students.

Faculty interest in developing and using case studies as learning tools

Engage’s Case ScenarioBuilder provides a case study authoring tool for development of pedagogically sound, interactive case studies. Survey results from a preliminary study in Spring 2010 show high interest using case studies to help students practice solving with real world issues and problems. 50% of those surveyed have written their own case studies, and more than half responded positively to using web-based or interactive formats for cases. One faculty member said that they are already “starting to use web and interactive formats.” Others said that “web-based formats are appealing,” and that “other formats might be appealing if the cost to the students is not burdensome.”

Case ScenarioBuilder & The UW-Madison School of Business: An Analysis of Potential Use

Case ScenarioBuilder (CSB) is a project that has attracted broad campus interest and support.

The following instructors will use the Case ScenarioBuilder beta tool in their courses:

- UW Library Instruction Program: Copyright & Your Digital Media Project, Carrie Nelson
- Nursing 360: Human Sexuality, Rebecca J. Muehrer
- Women’s Health, Gastrointestinal Unit, Sumona Saha, M.D.
- Pediatric Tracheostomy and Ventilator Care (non-timetable course): U. of Wisconsin Pediatric Pulmonary Center

Instructor inquiries about using CSB have been made by Marquette University, Michigan Tech University and New York Law School.

CSB has attracted additional funding from 2 campus sources interested in discipline-specific customization of CSB for their use: approximately $2000 from Pharmacy, $6000 from Letters &Science.

2. Augmented Reality and Interactive Storytelling (ARIS) – a world class idea

ARIS is an example of a project begun with a good idea and sustained with Engage funding until external funds were awarded.

Engage provided $8000 to the ARIS mobile games for situated learning project which has gone on to have exceptional success in developing games that rely on the events and affordances of specific geographic locations through the use of handheld devices like iPhones; ARIS has attracted funding for further development to campus and gained international attention

Funding attracted includes:
- McArthur Foundation - $115,000
- Smithsonian & National Field Museum - $24,000
APPENDIX II

Engage instructors state that collaborating with Engage has changed the way they teach.

Mid-project survey responses by 2010 Simulations & Games instructors:

- My experience has reinforced the realization that students of today learn differently from us (instructors). I now design my course with more of the pedagogical considerations in mind.
- I get more creative ideas about tools to set up for students to use for learning on their own, instead of depending on me.
- It gave me something to offer my students to get involved with. It helped me directly relate to them - when I asked them to do an innovative/creative project for class I was able to model that.

APPENDIX III

What are the ongoing challenges for teachers and learners at UW-Madison and what can Engage do about it?

“5 Top Teaching Challenges” are selected annually by faculty, instructional and support staff. These challenges become inspiration for the Engage Faculty Advisory Group and staff to plan award programs.

2009 & 2010 “Top 5 Teaching Challenges:

1. Making lecture more interactive and engaging
2. Providing students with practice or reinforcement
3. Demonstrating complex concepts
4. Focusing students on real world problems or tasks
5. Giving prompt feedback

For more on the process: http://engage.wisc.edu/about/challenge/index.html