Writing-Enriched Curricula @ Smith?

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WEC is a faculty-driven model designed to support the curricular integration of relevant writing and writing instruction and to increase the rate at which student writing meets local faculty expectations.

These ends are achieved through the ongoing, creation, implementation, and assessment of undergraduate Writing Plans.
University of Minnesota, Twin Cities

Public, land-grant, R1
48,000 students (Twin Cities)
1-semester First Year Writing requirement
Since 1984, Student Writing Support
Since 1999, 4-course Writing-Intensive requirement
Since 2001 elective WAC programming
Since 2006 Writing-Enriched Curriculum
**Questions Drive Initiatives**

**Question:** How can we ensure that students in all degree programs receive adequate writing instruction?

**Answer:**

Institute writing-intensive course requirement

"Democracy arose from men's thinking that if they are equal in any respect, they are equal absolutely."
Aristotle

The Spread of liberal Democracy

Following the historic events of September 11th, the spread of democracy took over United States foreign policy. Scholars, government officials, and the media embraced and promoted the idea that democratization of the international community was America's next mission. However, in recent years critics argued that spreading democracy may be unwise or even harmful to the United States. The current Bush administration appears to have committed to the spread of democracy though their efforts have not been fruitful. The unsuccessful efforts of the administration caused many critics to argue that the United States should slow down or even abandon efforts to foster global democratization. Robert Kaplan, in
roadblocks of 3 sorts

- Narrow definitions of academic writing

- Course-based vs. curriculum-based focus

  **Systemic**
  - Course-based vs. curriculum-based focus
  - Uneven compliance with WI requirements
  - Inadequate funding for TA support

  **Conceptual**
  - Narrow definitions of academic writing
  - Constrained conception of writing instruction
  - Perception of writing and content as discrete instructional areas

  **Attitudinal**
  - Resistance to course or curricular "add-ons"
  - Disappointment with writing
  - Pedagogical uncertainty

- Inadequate funding for TA support

- Pedagogical uncertainty
**questions** drive initiatives

**Question:** How can we ensure an intentional and sustainable infusion of relevant writing instruction into diverse undergraduate curricula?

**Answers:**
- Put change in the hands of unit faculty
- Engage faculty in an ongoing process of unearthing, interrogating, implementing, and assessing discipline-specific writing values, practices and expectations
- Offer long-term customized partnership and support
WEC

Faculty conceptions of writing and writing instruction

Writing instruction (and assessment) within courses

Curricular transformation

Student conceptions of writing and writing instruction

Increased faculty satisfaction with student writing

Writing-Enriched degrees
UNDERGRADUATE WRITING PLANS

SECTION I: CHARACTERISTICS OF WRITING?

SECTION II: WRITING ABILITIES?

SECTION III: CURRICULAR SEQUENCING?

SECTION IV: ASSESSMENT?

SECTION V: SUPPORT?

SECTION VI: PROCESS?
In this space we'll discuss aspects of the course. Feel free to add new discussions and contribute where you think you have something of value to say!

Add a new discussion topic

<table>
<thead>
<tr>
<th>Discussion</th>
<th>Started by</th>
<th>Replies</th>
<th>Last post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparing and Contrasting</td>
<td>Heather Reyes</td>
<td>11</td>
<td>Heather Reyes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tue, 7 Oct 2014, 4:48 PM</td>
</tr>
<tr>
<td>Background music - good examples</td>
<td>Jeffrey Sanders</td>
<td>0</td>
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<tr>
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<td></td>
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<td>Tue, 7 Oct 2014, 4:47 PM</td>
</tr>
</tbody>
</table>

Not subscribed. Click to subscribe.
Write:

Focus on one class you’re currently teaching. Name a written assignment with an upcoming deadline.

With as much specificity as possible, list features characterizing successful student work.

3 minutes

Trade lists with someone seated near you. Similar? Different? (2 minutes)
WEC Locus: academic departments
Which three writing **abilities** are most important in this major?:

- Use field-specific terminology and formats
- Argue a position using a central thesis or hypothesis and evidence
- Create precise descriptions of processes, objects, findings etc
- Analyze and/or evaluate ideas, texts, or events
- Report complex data or findings
- Use correct grammar, spelling, and mechanics
- Create and incorporate effective visuals

**Earth Science**

[Graph showing the preferences of different groups (Affiliate, Faculty, Student) for each capability]
## Evolution of “analytical” in Mechanical Engineering

<table>
<thead>
<tr>
<th>2007</th>
<th>2008</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WEC Meeting #1</strong></td>
<td><strong>1st ed. Writing Plan</strong></td>
<td><strong>Grading criteria</strong></td>
</tr>
<tr>
<td>“Well, they need, you know, to explain, discuss, and demonstrate the physical models of prototypes...”</td>
<td>Clearly record and analyze activity related to laboratories and design projects, Synthesize and summarize key points, Analyze the audience and create a document that meets their needs</td>
<td>The text... Describes an experiment’s methods in enough detail to allow for replication by other engineers. Conveys experiment’s results using figures that provides clear synthesis of disparate data points. Makes final recommendation re: viability of the model using results to rationalize.</td>
</tr>
</tbody>
</table>
Development of Mastery

Sprague and Stuart (2000)

Awareness

Expertise

Novice

Beginner

Skilled

Expert

Master
From WEC surveys of students, faculty members/instructors, and external affiliates

“Writing seems to be thrown upon us... most of the upper level students feel inexperienced and unprepared for our upper level writing intensive courses within the major.”

Student, Anthropology

“This is a content course and I shouldn't be teaching basic skills. Students should have these skills to be accepted in the major or course.”

Faculty, Anthropology
With which desired writing ability do XXXs students struggle most?
Would you consider revising your approach to, or adding instruction on, any of the following writing abilities in the future in this course?

<table>
<thead>
<tr>
<th>Writing-Enriched Curriculum Abilities</th>
<th>Introductory</th>
<th>Intermediate</th>
<th>Required 4:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Organize research algorithm logically</td>
<td>XXX 1101</td>
<td>XXX 1101</td>
<td></td>
</tr>
<tr>
<td>2. Read and analyze a journal article for the way it’s written, its structure (introductions, findings, etc.)</td>
<td>XXX 1101</td>
<td>XXX 1102</td>
<td></td>
</tr>
<tr>
<td>3. Organize ideas so that they convey meaning in ways that can be understood by the reader</td>
<td>XXX 1102</td>
<td>XXX 3101</td>
<td></td>
</tr>
<tr>
<td>4. Follow directions: focus on the objective of an assignment or task such that the main argument is salient</td>
<td>XXX 1102</td>
<td>XXX 3102</td>
<td></td>
</tr>
<tr>
<td>5. Discern valid sources and cite references</td>
<td></td>
<td>XXX 3102</td>
<td></td>
</tr>
<tr>
<td>6. Use precise and accurate technical knowledge</td>
<td>XXX 1101</td>
<td>XXX 3102</td>
<td></td>
</tr>
<tr>
<td>7. Make decisions and question assumptions; demonstrate awareness of what they are doing; work intentionally</td>
<td>XXX 1102</td>
<td>XXX 3102</td>
<td></td>
</tr>
<tr>
<td>8. Provide an explanation for regression results/models results</td>
<td></td>
<td>XXX 3102</td>
<td></td>
</tr>
<tr>
<td>9. Convey information in graphs/tables that are well labeled and easy to read and have the source (cite) graph from data</td>
<td></td>
<td>XXX 3102</td>
<td></td>
</tr>
<tr>
<td>10. Summarize content: understand what’s important to communicate concisely</td>
<td></td>
<td>XXX 3102</td>
<td></td>
</tr>
</tbody>
</table>
“Wait...Is this writing abilities, or is this about how to do the science? I think we’re messing this up a little bit here...I mean we think science is important but writing about it is a different thing.”

“But, X, we make them write about the science...we’re the ones!”

Chemistry faculty members, WEC meeting #1 (2016)
“Writing transfer is the phenomenon in which new and unfamiliar writing tasks are approached through the application, remixing, or integration of previous knowledge, skills, strategies, and dispositions.”

(Elon statement 2013)
**IMPLEMENTATION HIGHLIGHTS**

**All WEC Units:** adopt and adapt language from Writing Plan in developing assignments and grading criteria

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Score</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forwards new thinking, or repurposes old thinking</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Broadly focuses on feature, as in a new summary</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Is grounded in philosophical and/or research literature</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Contains suggestions for research verification</td>
<td>1</td>
<td></td>
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</tbody>
</table>

**Earth Science: five-minute paper**

Earth Sciences: List points to be made in a caption for the below figure (2 minutes). Collaborate with a partner to write a caption appropriate for a college level textbook (3 minutes).

![Image of ATP synthesis diagram](image-url)
This guide will show you how to write a problem set.

1. **Before you begin**
   
   If you understand the purpose of your writing before you begin, your problem set will turn out better. This section describes background information and the purpose of a problem set.

1.1 **Why this is important**

   You will come across problems such as the following very often in your mechanical engineering coursework:

   ![Problem Set Example](image)

   However, the very worst answer you can submit to a homework problem is:

   ![Homework Example](image)

   The reason is that the grader doesn’t care what your answer to the problem is. Instead, the grader wants to know the logical thought process you used to get there.

   In engineering practice, problems are seldom as simple and straightforward as an engineering textbook. However, if we can verify the logic and assumptions you use to deduce a textbook answer, we can grow your professional skills.
The issue of potential impact on species richness under potential climate change conditions has largely been examined in alpine regions (Moen et al. 2008). Furthermore, a paper examined potential outcomes of species richness in Europe (Thuiller et al. 2006). However, the boreal forest of North America is also receiving attention in modeling distribution of tree species (McKenney et al. 2007). In addition, vegetation changes were modeled for northern Alaska in relation to climate change conditions (Euskirchen et al. 2009).

1. What’s the problem?
2. Why?
3. Suggested revisions?
Implementation case study #3

- **Step #1:** Revising writing instruction abilities
  
  "These efforts have already been enormously beneficial. At the most fundamental level, they have raised writing instruction to prominence in faculty discussions about curriculum, pedagogy, and undergraduate advisement. They have provided a mechanism for reviewing and sometimes revising habits and procedures that had become obscured over time. Significantly, they have also increased awareness among our community of majors about our goals and expectations for writing in the discipline."

- **Step #2:** Developing a comprehensive curriculum

- **Step #3:** Pilot testing new instruction methods

- **Step #4:** Assessing the impact of new instruction

- **Step #5:** Revising and refining the curriculum

- **Step #6:** Assessing course outcomes

- **Step #7:** Add credits and WI certification
What effect is creating, implementing, and assessing a Writing Plan having on writing instruction in WEC units?

What impact is WEC having on student writing?

Any impact on rates of retention?
Graduation?

How successful is the WEC model for creating faculty-authored Writing Plans?

- Writing Plans (97)
- Pre-post surveys
- Assignment analysis
- Meeting transcriptions
- Curricular mapping
- Annual U-Wide surveys (SRT, SERU)
- Rating of student writing

Triennial rating of student writing
Annual U-Wide surveys (SRT, SERU)

Quantitative analysis (propensity)

CWB approval of Writing Plans
Annual Liaison survey
Application for WEC enrollment
ASSESSING WEC: RATING

1. Expected Writing Abilities are translated into ratable criteria

2. Iterative rating sessions are held in which 3 raters (2 from outside the target unit) rate capstone-level papers/projects against faculty-generated criteria.

3. Rating results (and debrief comments) are presented to faculty, who are asked for their reactions/observations/next moves.
<table>
<thead>
<tr>
<th>#</th>
<th>Criteria: The text...</th>
<th>2013</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Synthesizes information and ideas from multiple or disparate sources.</td>
<td>.59</td>
<td>.81</td>
</tr>
<tr>
<td>2</td>
<td>Describes what is seen (in the field and/or lab), read (in an article, book, and/or website), or heard (in class, lab, and/or the field) so that the observations and information is understandable to someone who was not present.</td>
<td>.58</td>
<td>.57</td>
</tr>
<tr>
<td>3</td>
<td>Explains the meaning of data and figures so that they are understandable to someone who does not have the data or figures.</td>
<td>.32</td>
<td>.54</td>
</tr>
<tr>
<td>4</td>
<td>Communicates information, data, and concepts in figures, graphs, and/or diagrams clearly with adequate labels.</td>
<td>.31</td>
<td>.67</td>
</tr>
<tr>
<td>5</td>
<td>Communicates information, data, and concepts in figures, graphs, and/or diagrams clearly with without extraneous or distracting elements.</td>
<td>.84</td>
<td>.93</td>
</tr>
<tr>
<td>6</td>
<td>Answers a question or makes a point using logically sequenced sentences.</td>
<td>.71</td>
<td>.77</td>
</tr>
</tbody>
</table>
**Strengths:**

- Almost all did a nice job of synthesizing existing literature – Could tell a geologic story in a manner consistent with the field (Criteria 1, 2, 3)
- Described accurately and seemed to “get the story” (strong time sequence)

**Weaknesses:**

- Some beautiful figures but a lot of variability in their quality and integration, especially topographic maps. (all three)
- Virtually none of the topographic maps were marked up (Should have been marked up more extensively) Maps didn’t always show what they described in prose (Only one student mentioned the “doubly plunging syncline” expressed the geology topographically) (all three)
- Scaled badly— Pictures from their notebooks showed that the content was missing in visuals and not just as a result of issues with technology (Insider and Outsider)
- Organization at the big picture level was poor – the format of this document was somewhat troublesome (Insider and outsider)
  - Abstract, geologic history, rock types, outcrop stops (the elements were there, but there was a lot of variabilities
  - Some commonalities in organization might be accounted for by students ‘sharing’ their formats or discussing them, but largely inconsistent
- The abstracts sometimes served as introduction; some had abstracts and intros, some abstracts and no intros
- The geologic history sometimes contained observational data, which is inconsistent with disciplinary practices. (Insider and outsider)
- The report didn’t indicate how the individual ‘stops’ worked into a larger narrative
- A couple lacked the visual information necessary to justify conclusions.
- Passive voice constructions occasionally seemed to weaken insights (all three) – Folks who use the active voice probably write better, but passive is not always viewed as a fault. Passive voice can disguise shoddy analytical work
  - Active voice construction of observations was more often followed with a causal explanation or additional supporting details. Passive constructions simply described physical observations. As a result, the students who used active voice provided more evidence of reasoning.
- Students seem to struggle more in the outcrop descriptions (Is it a problem of their notes?)

2. Were any of the items on the rating guide difficult to interpret/use? If so, which were they? What sorts of questions did these items provoke?
Evidence of sustainable changes...

• Faculty perceptions and confidence (transcripts, surveys, interviews, assignment analysis)
• Explicit instruction and authentic assessment (Writing Plans, annual Liaison survey)
• Course-based vs. curriculum-based integration (Writing Plans)
• Rate at which student writing is meeting faculty expectations (Triennial rating)
• Rate at which student writers report engagement with productive writing practices (SERU)
### Selected group of theoretical concepts/research studies that help us understand the WEC model’s design/success

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Learning</td>
<td>Committee on Developments in the Science of Learning (1999, 2018)</td>
<td></td>
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</tr>
</tbody>
</table>
## Overview and Conceptual Underpinnings of the Four Categories of Change Strategies

<table>
<thead>
<tr>
<th>Aspect of System to be Changed</th>
<th>Prescribed</th>
<th>Emergent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Individuals</strong></td>
<td>I. Disseminating: CURRICULUM &amp; PEDAGOGY</td>
<td>II. Developing: REFLECTIVE TEACHERS</td>
</tr>
<tr>
<td></td>
<td>Change Process: Tell/Teach individuals about new teaching conceptions and/or practices and encourage their use.</td>
<td>Change Process: Encourage/Support individuals to develop new teaching conceptions and/or practices.</td>
</tr>
<tr>
<td></td>
<td>Examples: dissemination/training (SER, FDR), focused conceptual change (FDR)</td>
<td>Examples: reflective practice (FDR), curriculum development (SER), action research (FDR, SER)</td>
</tr>
<tr>
<td><strong>Environments and Structures</strong></td>
<td>III. Enacting: POLICY</td>
<td>IV. Developing: SHARED VISION</td>
</tr>
<tr>
<td></td>
<td>Change Process: Prescribe new environmental features that Require/Encourage new teaching conceptions and/or practices.</td>
<td>Change Process: Empower/Support stakeholders to collectively develop new environmental features that encourage new teaching conceptions and/or practices.</td>
</tr>
<tr>
<td></td>
<td>Examples: policy change (HER), strategic planning (HER)</td>
<td>Examples: institutional transformation (HER), learning organizations (HER)</td>
</tr>
</tbody>
</table>

**Figure 1.** Overview and conceptual underpinnings of the four categories of change strategies.
Why does WEC succeed in making sustainable changes?

My hunches: because it...

- focuses on **conceptual change first**
- **works directly with faculty resistance**
- engages **entire faculty groups** (rather than self-selected subset)
- strains to place control (conceptual and procedural) **in the hands of faculty**
- **balances structure with flexibility**
- **focuses on curricula** rather than individual courses
- builds capacity by offering **sustained partnership** and support
- forges **trusting relationships** based on respect and curiosity
- demonstrates a **grounded curricular assessment loop** that accreditors are looking for
<table>
<thead>
<tr>
<th>Elective</th>
<th>WEC: critical attributes / methods</th>
</tr>
</thead>
</table>
| Faculty-driven (department-located) | • activity takes place in departmental meetings  
• Faculty Liaison co-wrangles activity, creates and vets the plan  
• WAC professional works inductively as external thinking partner in a series of structured discussions |
| Curriculum-focused | • Writing is discussed in curricular context |
| Data-driven | • Locally collected, locally-owned data are brought to each meeting for interpretation and discussion |
| Slow-paced (sustained) | • Writing Plan evolves over three editions in a decade (+)  
• Plans are context relevant and build toward self-sustainability |
| Supported | • Liaisons paid stipend  
• Plans are granted implementation funds  
• WAC professional serves as unit-dedicated long-term partner |
| Perpetually-assessed | • Multiple modes of unit-specific and programmatic assessment focus on instruction, writing, Writing Plans, WEC, methodology... |
Among the universities adopting/adapting WEC

- Colby
- Florida Atlantic
- Moravian College
- Univ. of Bielefeld
- Univ of OK
- Univ of VT
- Hobart and William Smith
- University of Oslo; Gothenburg University

http://www.omnetics.com/lindrep/world-europe/
WEC @ Smith?

Current affordances?

Challenges?
• EXTRA SLIDES
FISCAL SUPPORT
- Professional development funds for Faculty Liaison
- Funds supporting approved implementation activity

ASSESSMENT DATA
- Thorough baseline survey data (three populations)
- Comprehensive, de-identified student writing samples (and sample instructional materials) from three courses
- Curricular maps
- Longitudinal rating data
- Other (as undertaken by units)

INSTRUCTIONAL SUPPORT
- Workshops, consultations, material development (as designated in Plan)
- Student writing samples (and sample instructional materials) from three courses