

# **Improving Writing Skills of Construction Management Undergraduates: Developing Tools for Empirical Analysis of Writing to Create Writing-Enriched Construction Management Curriculum**

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In 2011, the University of Minnesota's Construction Management (CM) program received funding from the Writing Enriched Curriculum (WEC) project. WEC operationalizes the university's commitment supporting integration of effective discipline-relevant writing instruction. Funding, collaboration with members of the WEC team, and technical support enabled the assembly of a comprehensive, multi-year plan to examine and improve CM student writing. Because many, if not all, elements of the WEC process may prove portable to other institutional contexts, this paper describes the process of creating, implementing, and assessing the faculty-authored CM Writing Plan. Specifically discussed are the initial stages of a multi-year process including the development of a Writing Plan; the first year course mapping; analysis of writing assigned in CM courses; and work the department will do going forward with WEC.

**Key Words:** Writing Instruction in Construction Management, Development of Writing Instruction Analysis Tool, Writing Across the Curriculum, Writing Assessment

## **Introduction**

The Writing-Enriched Curriculum Program (WEC), developed at the University of Minnesota (UMN), offers faculty a method for developing, implementing, and assessing undergraduate writing plans. The WEC approach to supporting effective and relevant writing instruction on a departmental level allows for the identification of local, authentic writing outcomes and the implementation of instructional methods tailored to particular needs of students and faculty within majors. Thus, the WEC project offers faculty a comprehensive structure that engenders assessable and sustainable change in curricula and, ultimately, in student writing.

The UMN's Construction Management program offers a Bachelor of Applied Science (BASc), a minor, and a certificate. It has no graduate courses and the majority of faculty members (i.e., instructors) are adjunct and professionals working full-time in the construction industry. In 2011, the Construction Management program engaged the Writing Enriched Curriculum initiative to improve writing of program majors. Continuous comments from faculty about the poor quality of student writing and the program's Advisory Board's emphasis on the importance of possessing good writing abilities provided the impetus for admittance into WEC. This paper focuses on the creation of the first-edition Writing Plan and the first year of plan implementation. Creating its Writing Plan required CM faculty to research and develop programmatic writing abilities and to

map its course curricula against desired student skill outcomes in order to expose the strengths and weaknesses of existing writing assignments across the curriculum.

## **Background**

In 2006, as part of a University-wide strategic planning process, a writing task force determined although its four-course Writing Intensive (WI) requirement had helped decentralize writing instruction, explicit discussion of writing was concentrated in WI courses alone. Those who taught non-WI courses were frequently unaware of what was being taught in their department's WI courses, and were therefore unable to explicitly address writing and reinforce writing instruction (Flash, 2013). In addition, WI-certified courses were not always logically situated within students' course of study. Focus groups found: 1.) students were taking WI courses purely to attain WI credits (when they should be courses correctly integrated into their major course of study), and 2.) students were often confused if a non-WI course required significant amounts of writing. Faculty members teaching non-WI courses resisted teaching writing per se, with the common refrain, "Writing instruction is not our area of expertise; we can't be expected to teach it." After collecting data from students and faculty about teaching writing at the undergraduate level, University task forces determined current requirements (including writing-intensive courses) were not providing adequately clear, comprehensive approaches to improving undergraduates' writing abilities. These findings informed the University's interest in launching WEC, an innovative Writing in the Disciplines program focusing on disciplinary discourse norms, departmental curricula, and faculty participation (Flash, 2013).

### *The Writing Enriched Curriculum*

In 2007, the University applied for and was awarded a Bush Foundation grant supporting the development and piloting of a Writing-Enriched Curriculum project. The new project, created and led by the university's Writing Across the Curriculum Director, is premised on the belief faculty members situated within disciplines are positioned to offer powerful, relevant writing instruction. Yet, WEC recognizes individual faculty members are often unsure about how to instruct students in writing (Flash, 2013). WEC is informed by both North Carolina State University's outcomes identification program (Carter, 2002) and Broad's dynamic criteria mapping process (Broad, 2003). The program provides an ongoing method by which faculty members within academic units develop unit-specific writing plans identifying writing values, assessing current adequacy of writing instruction, and making requests for specific forms of assistance.

Two to five academic units (a unit is the name given to a department, school, or college) are admitted to the WEC project annually. The unit's relationship with WEC is long-term, though likely requires more support in the first few years. In 2011, the Construction Management program was admitted as part of Cohort 6. This cohort also included Architecture, Family Social Science, Physics, and Philosophy. Units participating in WEC generate faculty-authored Writing Plans and submit those to the University's Campus Writing Board. Approved plans then move through an ongoing cycle of implementation and assessment (Flash, 2013). In creating these

plans, the unit's faculty is led by a member who serves in the role of WEC Faculty Liaison. Steps in creating the plan include:

- Describing writing in their specific discipline.
- Naming the abilities with which they would like undergraduate students to become proficient by graduation.
- Mapping these abilities across their curriculum.
- Planning for relevant writing assessment and instructional support.
- Collecting writing samples from three core courses at various levels.
- Administering base-line surveys to all students in the major(s), to faculty, and to professional affiliates.
- Holding four faculty meetings in order to generate content for the Writing Plan (Flash, 2013).

Currently, 42 departments or programs representing 66 undergraduate majors have submitted and received approval of Writing Plans. Though the plan creation process is the same for all units, developed plans can be significantly different. For example, in answer to the Writing Plan question, "What writing abilities should majors be able to demonstrate by the time they graduate?" The department of Horticultural Science lists nine key abilities including: organize writing according to standard scientific reporting method's scientific method and convey reproducible results (Watkins & Hoover, 2010). The department of African American and African Studies answers the same question by listing 11 key abilities including: apply the principles of rhetoric and logic; and critique myths and stereotypes about African American and African peoples, histories, and cultures (Jacobs, 2011). Theater Arts and Dance answers the question with a multilayered list of headings and sub-lists. They include, "Unlock and explore the imagination" with three bulleted descriptions of what the above means: 1. Go beyond your first instinct, what you think is 'right', and/or what is literal; 2. Take risks, be willing to make mistakes and get messy; and 3. Keep open and develop multiple options (Werry, 2011).

Flexibility in WEC design allows departments to discuss and invest in writing improvement techniques aligned with their outcomes. On the other hand, the participants are not completely working as isolated entities. All participants receive guidance from WAC/WID teaching consultants who staff the WEC program. In addition, faculty liaisons from all units meet once per semester as a group to share practices and discuss relevant topics pertaining to WEC. WEC research assistants also meet at least once a year. Thus, programs participating benefit from peer sharing of information, including discussions of problems or struggles in implementing or progressing with writing improvement. Further, new program admits to WEC now have a body of work executed by predecessors to examine and build upon.

### *Construction Management Writing*

Construction management degree programs, at their best, create course content sensitive to the needs of the current employment market set within a rigorous academic framework (Farooqui, Ahmed, & Saqib, 2011). The coursework must impart (teach) skills needed to enter and be successful in the construction industry in addition to possible future academic work (Choudhury, Rocha, & Burt, 2003). Writing abilities taught and acquired are tied to tasks essential to

executing construction projects and participating in successful construction companies (Choudhury, Rocha, & Burt, 2003). These tasks often include planning, organizing, scheduling, implementing, and monitoring construction projects (Farooqui, Ahmed, & Saqib, 2011). Therefore, realization of a construction management WEC program needs to be sensitive to the professional and applied focus of the degree.

### *Designing a Construction Management Appropriate Writing Plan*

As WEC participants, the program executed preliminary research of writing abilities needed in the CM field. Construction Management personnel surveyed CM students, instructors, and industry professionals about writing. Designing and distributing three questionnaires, response rates were as follows: CM instructors' - 75% at 15 of 20; students' - 37% at 26 of 70 majors; and professionals' currently working in the field - 59% at 104 of 175 respondents with 67% working as executives and project managers (Hilger, 2011).

Survey analysis noted instructors' evaluation of student writing was mixed, yet they uniformly agreed on the importance of strong writing abilities. Instructors identified the following three skills most needing improvement: analyzing and creating concise summaries of ideas, texts, or events; appropriately using terminology and jargon along with correct grammar and punctuation; creating precise descriptions of processes, objects, and findings. CM faculty views aligned with industry responses. Noted in the CM writing plan, 90% of the WEC Industry survey respondents considered writing very or extremely important (Hilger, 2011). Typical comments about writing from a CM professional included the idea that excellent verbal and written skills are a necessity to manage today's construction projects. The top three industry-standard writing genres, as determined by industry-rooted faculty and confirmed by the WEC Industry survey were correspondence (letters, memoranda, e-mails, etc.); proposals, presentations, or feasibility studies; and reports such as observations, recordkeeping, or minutes (See figure 1 for an extended list).

[Figure 1 approximately here]

Survey results were analyzed, presented, and discussed at three faculty meetings, and an initial proposal of 16 writing abilities evolved. The list was further distilled and, finally, the faculty and administrative staff jointly crafted criteria describing those abilities students should be able to demonstrate by graduation. They are as follows:

1. **Communicate clearly:** Articulate problems, proposals, procedures, and policies using concrete, unambiguous language.
2. **Use evidence:** Habitually maintain and comprehensively recall, recite, and apply documents, records, notes, data, and independent research in support of critical thinking.
3. **Communicate about problems and conflicts:** Objectively analyze, recite, assess, evaluate, interpret, and communicate issues, problems, conflicts, and their solutions.

4. **Understand and address stakeholder concerns:** Inspire confidence using language, tone, authentic voice, and technical detail appropriate to the stakeholder perspective and ability to comprehend.
5. **Correctly use industry-standard documents:** Read, create, modify, and interpret drawings, forms, and other industry-standard documents.
6. **Interpret technical material:** Demonstrate mastery and proper application of technical terminology, tools, jargon, and software.

Subsequently, the program created a plan of action. This plan consisted of steps to be taken over the next three years in order to improve writing capabilities of all CM students. The plan consists of the following:

1. Map existing writing assignments across the curriculum following interviews with faculty.
2. Evaluate need and identify opportunities for changes to writing assignments that specifically target the writing abilities (outcomes).
3. Identify key courses to provide more targeted writing instruction and support.
4. Further writing support for students by developing student writing style guides with CM specific writing instruction and examples.
5. Develop a handbook - *Teaching Construction Writing: Guidelines for Faculty*.
6. Relate WEC work to accreditation (i.e. demonstrate compliance of the Writing Plan with the objectives of American Council for Construction Education (ACCE) and International Facility Management Association (IFMA) accreditation criteria (Hilger, 2011).

These steps were approved by the Campus Writing Board. In the fall of 2011, with guidance from the staff of the WEC program, department personnel and a graduate research assistant began implementing the Writing Plan.

## **Theory**

The Writing Enriched Curriculum (WEC) was established on the following principles (Flash, 2013), gleaned from three decades of research and experience by those who work with writing at the University:

- Because writing is instrumental to learning (Appleby, 1985; Fulwiler & Young, 1982; Parker & Goodkin, 1987; Ackerman, 1993), writing instruction is the shared responsibility of content experts in all academic disciplines. This principle challenges traditional models of writing instruction which consider writing the purview of English or Literature departments.
- Writing can be flexibly defined as an articulation of thinking, an act of choosing among an array of modes or forms, some involving words. In Construction Management, for example, writing includes creating schedules, cost estimates, contract and accounting documents.

- Writing ability is continually developed rather than mastered. The WEC program is therefore poised to support curriculum-wide approaches to writing instruction, rather than focusing on single, atomized courses.
- The incorporation of writing into content instruction can be most meaningfully achieved when those who teach are provided multiple opportunities to articulate, interrogate, and communicate their assumptions and expectations.
- Those who infuse writing instruction into their teaching require support.

The WEC model engages an ongoing implementation-assessment cycle. Once the unit faculty collectively creates its Undergraduate Writing Plan and the Campus Writing Board approves it, implementation begins. Since WEC participation is viewed as an ongoing process, units use regular assessment to inform future implementation.

In order to assess WEC's effectiveness, WEC administrators evaluate “—curricular, attitudinal, and outcome-based changes in writing instruction and student writing” (Flash, 2013). To do this, the WEC administrators analyze participant surveys, interviews, and writing samples in all WEC units. Capstone-level writing is rated every two to three years against faculty-generated, discipline-relevant criteria as defined by each unit's Writing Plan (WEC Assessment Update, 2010b). This rating is conducted by a panel of independent raters. The panels are composed of two raters from within the discipline and one writing expert. Raters judge each student sample against the criterion using a two-point, (0-1 system). Data yielded by these ratings are relayed back to unit faculty for interpretation and possible actions. Baseline rating is conducted before any WEC work has been implemented and then samples from the same course are rated subsequently (every three years).

In the Construction Management program, baseline rating was conducted August of 2011 using fifteen criteria. The results showed the two criteria scoring highest (both at 0.90) were, “The issue, problem, or conflict is recited or summarized without bias,” and “Portrays arguments or issues using the writer's authentic voice.” The third highest rating at 0.83 was, “Applies data, research, and records to critical analysis and/or problem-solving.” Content receiving the lowest scores revolved around proper citation. These included the following: “Integrates precise citation and interpretation of drawings, contract documents, and forms” (0.29); “Uses complete and consistent citation for written content where completeness means that readers could track down all referenced sources” (0.33); and “Adequately references data, research, and records” (0.48). The weakness may be understandable considering instructors are veteran practitioners in the field, and, most often, best able to focus on the applied, technical aspects of course content. As the WEC initiative moves forward within Construction Management, citation in student writing is something the department knows to focus on to improve writing. The citation weakness in CM student writing was also detected by course mapping. Without the WEC process, the weakness was not known.

Another assessment tool has been the integration of Student Experience in the Research University Survey (SERU). SERU “offers a systematic environmental census scan of the undergraduate experience and an in-depth analysis of the varied types and levels of undergraduate student engagement” (WEC Assessment Update, 2010a, p. 1). In 2010, the WEC program was able to add a “wildcard” module to the survey asking students about their

experiences with writing assigned in courses. WEC students were identified as such if their academic major matched one of the WEC units. WEC assessment questions asked frequency of engagement with the following:

- Use of facts and examples to support their viewpoint.
- Incorporation of ideas or concepts from different courses when completing assignments.
- Examination of how others gathered data, interpreted data, and assessed the soundness of their conclusions.
- Reconsideration of their own position after assessing the arguments of others.

Students in WEC participating degrees reported more frequent engagement with the above. There was some variation depending on how long the unit had been a WEC participant (WEC Assessment Update, 2010a). Programs who were newer to WEC reported higher rates of engagement. This is likely evidence showing WEC administrators and programs were learning from earlier cohorts and improving on methods (WEC Assessment Update, 2010a). Learning is likely occurring, in part, through the meetings held each semester in which all WEC programs participate. Content of WEC participant meetings includes presentations from participants and discussion of common struggles or questions implementing WEC.

## **Method**

Units engaging the WEC process, including the Construction Management program, investigate and implement methods to improve writing of undergraduates. In order to better understand needed actions and strategies, CM took an in-depth look at writing currently assigned. The following presents the program's mapping and analysis of writing within CM courses.

Curriculum mapping is used at all education levels and across disciplines in order to assess and improve student learning. Because of the CM degrees' close ties to industry, curriculum mapping (or audits) can be an especially useful tool keeping courses up-to-date, teaching skills people will need to manage construction projects (Farooqui, Ahmed, & Saqib, 2011). Therefore, mapping of CM courses informs analysis of writing within the WEC framework, but the information can also be used to see if the writing assignments and skills taught match industry needs, and whether the program tends to concentrate the use of specific writing genres at the expense of diminished use of other, industry appropriate genre.

The department designed a mapping tool based on the six desired writing abilities. This consisted of a grid containing a list of the genres of possible writing assigned in CM courses; the six learning outcomes (abilities); as well as whether a rubric was used for the assignment; what instructions were given to students; the difficulty level of assignments; and point value assigned. (See figure 2 for an example of the course mapping grid.)

[Figure 2 approximately here]

The research assistant (RA) for the CM WEC project interviewed each construction management instructor over the course of a year beginning in the summer of 2011. She requested course

syllabi and any other relevant documents as well as an in-person meeting to be held subsequent to receiving course documents. Before the meeting, the RA read course documents and began filling-in the course map. During the meeting, the RA and instructor discussed course assignments. Instructors explained what each assignment entailed, what level of work students generally produced, and what the instructor expected students to learn.

To identify which of the six writing abilities the assignment reinforced, basic logic was used. For example, an assignment requiring students to write about a case of a structural failure of a roof and subsequent methods used to repair it would be counted (1 count each) toward: 1. Communicate clearly; 2. Use evidence; 3. Communicate about problems and conflicts; and 6. Interpret technical material. A copy of the completed course map was emailed to the instructor whereupon the instructor was advised to view it and to let the RA know if anything in the course mapping was incorrect.

## Results

Once the individual courses were mapped, data was placed into a composite map. Descriptive statistics were run showing the amount of writing assigned per identified genre (see table 1). Reading comprehension was the most common assignment genre, yet “reading” was interpreted broadly by program instructors to include such things as answering questions at the end of a chapter or writing an interpretation of a safety violation photo. Recalling the Industry survey and the genres most frequently used at work, the top four responses were:

1. Correspondence
2. Proposals
3. Reports
4. Budgets or Cost Delivery

Within CM course assignments, correspondence is most frequently assigned after reading comprehension; presentation/proposals with reports was 6<sup>th</sup>, and budgets at 8<sup>th</sup> out of 14 writing genres. The mapping thus revealed that reading comprehension as the most popular assignment genre was not reflective of industry needs, and that correspondence as the second most assigned genre did reflect industry needs well.

[Table 1 approximately here]

Next, the likely impact of writing assignments on the six desired writing abilities was analyzed (see figure 3). Measuring how writing assignments impact the six desired writing abilities is, as of yet, a tool still being cultivated, and results should be viewed through such a lens.

Nonetheless, the following information can be incorporated as a developing tool, assisting with the examination of how writing assignments affect the writing abilities needed. First, the mapping of demonstrated outcomes showed “clearly present technical material” was the most taught ability. At just about half the rate of the most taught, “use evidence” was the least. The fact that “use evidence” was least taught should not be surprising as the original baseline WEC rating of CM papers scored “proper citation use” low.



[Figure 3 approximately here]

Assignment genres were also investigated in relation to likely writing outcomes. Again, because the course mapping tool is in development, one must note a few improvements needed. First, assignments were recorded in the class period in which they were due. The mapping worked well as long as only one assignment was due, as was most often the case. However, some class periods had two or more assignments due and the impact on the learning of the six abilities was simply merged together within the same class period. Hence, in the case of more than one assignment due per class period, the learning outcomes mapped were simply divided by the number of assignments due during that class, and assigned equally to each assignment genre. Examining the course mapped in figure 2, note only one column had more than one assignment. Across all courses, the majority of class periods did not have more than one assignment due. However, future mapping is best carried out by each assignment being designated its own column.

The same combining of data occurred for number of pages of writing due within a class period. For example, a letter writing assignment sent to communicate information needed to deter a misunderstanding would get one point under writing ability #3, solve problems and conflicts, as would a 15 page paper discussing lawsuits faced by drywall installers. Though these both could be ways to impart writing skills supporting “solve problems and conflicts effectively”, the “amount” a student would learn about solving problems and conflicts given the differences in the two above assignments was not measured. Empirical data on the “amount” of learning from assignment genres could be up for debate for many reasons including styles of learning and the “amount” students learn from instructor feedback on assignments of any length. These are questions being considered now, and ones that will be considered in the future, as the program and WEC-staff continue with this work.

Noting larger discussions of how to measure “learning” as well as changes that could be applied to future mapping, further analysis was pursued. Figure 4 shows each genre of writing and the way this writing genre appears to impact the six desired writing outcomes. Essays, budgets or cost deliveries, and correspondence appear to be the assignments most able to impact the six learning outcomes. However, writing genres are not assigned at equal rates, i.e., CM students do more correspondence assignments than they do schedules. Figure 5 shows the assignment genres’ impact on outcomes considering the frequency the writing genre is assigned. Within the current CM curriculum, the genre correspondence, essays, and reading comprehension have the highest impact on desired outcomes.

[Figure 4 approximately here]

[Figure 5 approximately here]

Also, each of the six desired abilities was examined individually. Figure 6 shows the graph for ability #3, solve problems and conflicts. Again, essays, correspondence and reading comprehension assignments make a significant impact. Inversely, technical writing, interpret drawings or sketches, and budgets or cost delivery do not even show up. This outcome seems

logical since the delivery of teaching students to interpret drawings or sketches likely focuses on knowledge of structures and how those structures are represented in 2-D drawings. Yet, people in the field know conflicts can arise when drawings are misinterpreted. Knowing the relative absence of these types of genre within the curriculum gives instructors pause to re-examine how content could be delivered using genres other than what they typically assign.

[Figure 6 approximately here]

A presentation of the research results was composed for faculty to view at the Fall 2012 faculty meeting. Each instructor was given a two sided paper with information about writing in his or her course (see example, figure 7) and three questions to answer on the opposite side. These questions included:

1. Do you feel information accurately reflects writing assigned in your course? If your answer is something other than “yes”, please explain what should be changed.
2. Considering the title and content of your course, do the “desired outcomes” reflect what you want students to gain from your teaching?
3. After reviewing this summary of the writing and writing skill outcomes in your course, is there anything you might change? If so, what?

Answers to the questions were collected at the end of the meeting. All CM faculty who were not present were sent an email with the same information about their course and asked to respond to the questions. Twelve different faculty responses were collected with only minor changes recommended to the content or mention of future course changes.

[Figure 7 approximately here]

Currently, the program moves forward on its Writing Enriched Curriculum implementation having a better idea, certainly, what is being taught, but also how writing is being taught. There is also evidence suggesting what changes the program could make at the course and assignment level e.g., more focus on teaching proper citation; replacing some reading comprehension assignments with other types of writing. Further discussions with CM instructors about writing and continued effort to strengthen student’s writing abilities can now be informed by this mapping data.

## **Conclusions**

Clearly, a bachelor’s degree in construction management differs in many respects from, for example, a bachelor’s degree in comparative literature (CL). If a prospective student is curious about jobs acquired upon degree completion, websites of construction management programs often list a limited range of jobs, percentage of students employed upon graduation and what a student can expect for a starting salary. Arizona State University’s construction management degree information page answers the question, “What do graduates do?” by listing five possibilities: project engineers; estimators; planners and schedulers; project managers; with 25

percent of graduates either owning their own companies or becoming construction company presidents (Construction Management: Del E. Webb School of Construction, 2010). The above would be seen as fairly typical claims of a CM degree program. Conversely, if a prospective student investigates a comparative literature degree, careers upon graduation are widely varied. Brown University's comparative literature degree website discusses a recent survey of CL program grads finding alumni work in a multiplicity of careers and fields including academia, the arts and media, business, consulting, information technology, healthcare, journalism, law, marketing, public relations, publishing, teaching, etc. (Comparative Literature Career Forum, 2013).

To further the comparative literature comparison by examining Cornell University's Department of Comparative Literature website, it notes the program "—provides a broad range of courses in European as well as non-European literatures" (Undergraduate Major: Requirements, 2013). The degree page states the curriculum exposes students to multiple authors, themes and genres as well as courses in visual and media studies and other arts (Undergraduate Major: Requirements, 2013). While this major provides a "broad range" of courses, the range is more along the lines of time in history, cultures, and theories because much of the structure of courses consists of reading and analyzing literature. This type of knowledge delivery—while surely differing somewhat from instructor to instructor—likely has enough similarity to allow for apples-to-apples comparison of writing assignments across courses. On the other hand, construction management courses vary to a much larger extent. When we ran factor analysis on the course mapping data, courses did not group well together. Though connected programmatically, a CAD or BIM class has different content and delivery method than an estimating, scheduling or safety class. Even though topics are intertwined and building on one another, CM course content and delivery must cover a wide array of computer programs, management skills including human resources, as well as technical terminology and know-how.

Considering the variety of courses and skills offered within a CM degree and the importance of being a capable writer in this profession, how is CM WEC moving forward? While the basic research is completed and the WEC program is still a "project in process", WEC implementation will continue for several years with the next stages focused on developing the reference materials and the assessment phase of student writing to determine the overall effectiveness of the writing plan. First, a Student Style Guide for Construction Management is currently being developed so instructors and students can have ready access to a consistent, faculty supported resource for all the genre, including virtual "chapters" covering , Correspondence, Reports, Contract Documents and Forms, Budgets and Schedules, Researched Writing, and a Citation Guide, all integrated into the CM web-based course companion sites. Second, the creation of a "Teaching Writing in Construction Management" manual will help guide the largely adjunct faculty to apply relevant writing instruction techniques. Third, all course syllabi now contain a section stating genres of writing included in the course and the specific writing abilities the course is expected to deliver. This provides an avenue for, not just students to think about the writing specific outcomes in a course, but for instructors to clearly define and focus the writing toward desired outcomes.

Finally, WEC program staff and the CM program personnel will continue to evaluate student writing and implementation of teaching industry appropriate writing skills. Even in the absence of this continuing work, the mapping has proven very successful in assessing not only what was

being taught and how it was being taught, but also making faculty aware of a structure and possible ways of broadening their thinking around how the teaching of management concepts can be delivered using industry supported outcomes and genres.

This CM program listened to industry feedback desiring graduates with strong writing and communication skills, and is working toward applying systems to improve student writing. The efforts will hopefully produce graduates who are better writers, and thus, more competent construction professionals. The in-depth look at writing in a construction management program presented in this paper shows a methodology other CM departments may want to emulate; especially, as those in academia know, “soft skills” like communication will continue to be desired abilities of construction managers on tomorrow’s jobsite (Choudhury, Rocha, & Burt, 2003).

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