Spectators at Their Own Future: Creative Writing Assignments in the Disciplines and the Fostering of Critical Thinking

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OF THE THREE ARMS OF DISCOURSE identified by James Britton—expressive, transactional, and poetic—the poetic, the language of creative writing, has to date received the least coverage in the pedagogy of writing across the curriculum (WAC). In this article, I explore James Britton's and Art Young's notion of how moving away from expressive and toward poetic discourse (by working in the forms of creative discourse) evokes the spectator stance and enhances critical thinking in the disciplines. I discuss one creative writing across the curriculum (CWAC) assignment that utilizes that continuum between expressive and poetic discourse: it asks students to compose first-person short fictional pieces set five to ten years into the future in which they appear as characters on the job in their future professions. In engaging in this fictional narrative about professional activity, students (aviation and computer science majors) crafted a plot that allowed them to use course content to work through a particular set of problems they might encounter in the workplace. Students are transformed into characters inside their poetic objects and thus can contemplate themselves as professionals. They become spectators at their own futures, and in gazing ahead, they can follow and alter the trajectory of their assumptions. As a result, the spectatorship in this type of assignment can provide a stage for engagement with critical thinking in courses in the disciplines.

The Move from Expressive to Poetic Discourse

According to Britton and Young, discourse occurs on a continuum whereby expressive discourse has the mobility to inch more or less close to either transactional or poetic discourse. Expressive discourse is the arguably more natural mode, resembling ordinary talk (Britton, *Language* 177). Children's writing, freewriting, journaling, or emails are examples of expressive discourse. Poetic writing, or creative writing, in contrast, is an aesthetic artifact—it's "MAKING something with language"

through a knowledge of the conventions of the creative genres and it hopefully evokes an appreciative spectator stance in its reader (Britton "Spectator" 158-59 and 170-71). Young provides a close-up view of that spectrum between expressive and poetic discourse. That is, Young posits an intermediary point between the two poles such that some texts are closer to the intermediary expressive stage—"where the writing tends to the poetic but is not 'shaped'"—and other texts move closer to the poetic—and thus increasingly resemble creative writing or a polished literary product ("Considering" 79).

The protean nature of expressive discourse is important because it is through the polishing of the expressive into the more formal discourse of the poetic that "spectatorship" or critical thinking in the disciplines can occur. Working toward more formal creative writing affords benefits to learning since the "experience of writing in poetic form transforms thought and assists the writer in achieving the personal (evaluating new experience) and social (imaginative empathy and insight) purposes" (Young, "Considering" 83). The devices of creative writing change how students express course content, yielding "new perceptions of experience" and "the necessary distance for the individual involved in the self-examination of values" (83). Britton calls this critical stance the "spectator role" and proposed that poetic discourse is distinctive for the way in which it allows its author to become a spectator to his or her experience. When individuals recount a story—even as ordinary gossip—they are no longer a part of the event being described: they are evaluating their experience from a cognitive distance. Citing D. W. Harding, Britton describes the impact of this spectator stance:

> In participation we evaluate, necessarily, in preparation for action; but "detached evaluative responses [that is, those of the spectator] though less intense, tend to be more widely comprehensive than the evaluation which preceded participation." . . . The spectator, then, freed from the necessity to act, to meet the social demands made upon a participant, uses his freedom to *evaluate* more broadly, more amply. (109)

The "active but disinterested" mindset that comes from working with poetic discourse is less possible with transactional discourse (such as a job cover letter or an informational report), in which the writer is still a participant in the sense that he or she seeks in some fashion to cause change vis-à-vis the reader (land the job, change an opinion, stimulate action) (Young, "Writing" 161).

Spectatorship positions learners to course material such that critical thinking can be initiated and maintained. By becoming a spectator, students gain a valuable critical distance which allows them to engage in the foundational activities of the critical thinking coveted in higher education, activities which John C. Bean identified as

interaction with a problem, identification and critique of assumptions, and a dialogic interchange with the ideas of others (2-3). While composing creative writing, students are able to adopt alternative points-of-view, give consideration to context, and search for multiple possible outcomes or conclusions. Narrative, for example, has been attributed with expanded lines of inquiry for students learning code in an introductory programming course at The Robert Gordon University in Scotland. Rote learning was replaced with the "divergent nature of narrative – the fact that it is possible to imagine an endless series of scenarios which have the same set of core structural features but differ completely in narrative content" (McDermott et al. 39). With CWAC, students are also called upon to dialogically reflect on concepts and their greater context, on the interaction of self and larger society—a critical thinking capacity already noted in some disciplines. For instance, the field of sociology has designated a term, coined by C. Wright Mills in 1959, for the blend of imaginative and critical thinking that entails seeing the self in and as shaped by societal context: the "sociological imagination." In computer science, "the psychology of computer programming" refers to a sub-field which investigates programming as a social activity, not merely a matter of technical expertise, but rather one profoundly affected by the interaction of individual and group psychologies (Weinberg 33). Other fields of study could benefit from this sort of formalized understanding and application of the imagination, and CWAC can assist with this endeavor. The critical distance made possible by creative writing is hardly passive because in telling a story that addresses course concepts, for instance, students must literally activate or animate those concepts—exploring the complexities of the ideas through characters, plot, imagery, and so forth. Creative writing accentuates one of the properties which Janet Emig identified as unique to writing overall: it fuels learning because it is "enactive": we learn by doing—and writing helps us "do" (124-25). As a result of working with poetic discourse, students can't hide their level of comprehension behind what can become the bric-a-brac of conventional academic assignments—in-text citations, paraphrase, and so forth: instead, students engaged in writing creatively in the disciplines need to activate and extend their knowledge.

Creative writing assignments can be used throughout the curriculum for the promotion of discipline-specific learning. Young has assigned creative writing to science, business, and engineering majors in literature courses, but he maintains that creative writing not be limited to literature courses and instead be tailored to the content of courses from across the curriculum ("Considering" 87-88). Young's facilitation of such assignments in disciplines including psychology, philosophy, biology, architecture, and chemistry is documented in *Teaching and Learning Creatively: Inspirations and Reflections*, the 2006 edited collection on the poetry-across-the-curriculum initiative at Clemson University. Describing the application of creative

writing in an Abnormal Psychology class, Young and co-authors state that "writing a poem is an exercise in problem finding, a skill essential to creative work in both the arts and the sciences" (Connor-Greene et al., "Poetry" 215). Patrick Bahls has developed poetry assignments in mathematics both for general education courses and ones taken by math majors. For Bahls, poetry provides students with an alternative discourse to the potentially daunting terminology of mathematics by allowing students to explore math in personal and jargon-free ways. As a result, general education students gain the comfort of using genres familiar to them from the qualitative work of their majors, and underclass math majors gain the confidence that may persuade them to continue with the major (*Student Writing* 120; "Math and Metaphor" 76-79). In fact, the functionality of CWAC to promote discipline-specific learning is evinced in its appearance in pedagogy journals in a range of disciplines, including *The Journal of Education for Business; Teaching Sociology; The Journal of Medical Humanities; Journal of General Internal Medicine; Families, Systems, and Health; Journal of Chemical Education;* and *Journal of Health Psychology.*

Creative writing assignments set in the future, including ones in which students become spectators of their future professional lives, compel students to engage in inductive thinking since what students are creating could be considered extended hypothetical examples. Story-telling was categorized by Aristotle as a type of inductive-based example: "But of examples, there are two species; for one species of example is the quoting of real matters of fact which have actually taken place; another is fabricating them yourself; and of this method, one species is illustration, the other fable" (170). Narrative, as an extended hypothetical example, requires students to understand course concepts as a type of observed evidence sufficiently enough to make a credible prediction, in fiction, about the future of those concepts. *Given x, y, and z, what could possibly happen* is a different cognitive act from simply restating what already has happened and what is already known. Exemplification transforms a nebulous or abstract discussion into something more concrete because it requires the introduction of evidence (Wästerfors and Holsanova 520, 547). At the same time, examples can be understood as "a point of departure" from reality, and one type of example, the "virtual example," is a way to increase comprehension (Wästerfors and Holsanova 519, 546). It is precisely that capacity to diverge from the known and not only to move into but to *illuminate* the unknown that is one of the functions of the poetic discourse. As Britton, again citing H.G. Widdowson, explains, the poetic results in text "independent of a social context and expressive of a reality other than that which is sanctioned by convention . . . literature must be deviant as a discourse" ("Spectator" 160). As aberration, such a perspective allows the student to engage critically with disciplinary knowledge: "To exemplify what never happens may in an inverse way illuminate what really happens" (Wästerfors and Holsanova

546). Through fiction assignments, for instance, Nancy Welch gets her students to use inductive thinking as a way to evaluate critically assumptions about the present or to perform "sideshadowing." Sideshadowing means thinking critically about the present moment such that any future outcome doesn't seem inevitable (Welch 120).

Futuristic Narrative Assignment in the Disciplines

In the creative writing assignment described in this article, students used the genre of short fiction to design a futuristic event in which they are participants. Specifically, students were asked to write a first-person short story in which they appear as a character in a narrative that takes place in the future and on the job (in plane, airport, air traffic control tower, cubicle, conference room, cafeteria) over a single work day or through two separate scenes, using flashbacks and flashforwards. None of the students were English or creative writing majors. The assignments were presented to aviation majors enrolled in an upper-level cockpit resource management course in their junior or senior year, to sociology of gender students, and to computer science majors in a 300-level software engineering course.[1] The goal of these short stories was to manifest course content; rather than restating the technology, terminology and concepts of a field of study, students needed to show those elements of the course *in action,* encapsulated in a plot in which they were a main character. Through dialogue, detail, and plot, students implicitly demonstrated course concepts including situational awareness, mission analysis, and interpersonal communication (aviation); occupational segregation and intersectionality (sociology); and moving target, Miller's Law, and cognitive dissonance (computer science) without specifically referencing those concepts.

This assignment builds off of other CWAC assignments in the disciplines that require students to investigate disciplinary concepts and professional practices through imaginary or on-the-job scenarios. In Doug Laufer and Rick Crosser's series of scenario-based CWAC assignments in undergraduate accounting and tax courses, students are asked to contemplate various problematic situations. In one, students are told to pretend they are "a sole proprietor tax practitioner" on April 14, the day before Tax Day; upon visiting a client's home office while the client is away on business travel, the student/tax practitioner notes the luxury of the client's office furnishings and realizes the furnishings need to be quickly included in the tax filing. The student is told to write a letter that can be faxed to the imaginary client addressing the need to include the office furnishing in the April 15 filing (89). In another CWAC project, Daniel Moore asks business students to play a role by composing reports and memos with the goal of adopting a range of perspectives and crafting an appropriate voice. While Laufer, Crosser, and Moore require students to imagine themselves in a future situation of professionalism (already employed as a CPA in

a firm), the resulting text is in a genre typical of that profession (tax filing, memos, and in another of Laufer and Crosser's assignments, a section of an intermediate accounting textbook). The CWAC project described in this article builds off these approaches by asking students to cast themselves as characters in first-person fiction rather than compose a text in response to an imaginary situation. Specifically, the narrative of the first-person fiction project discussed in this article allows students to investigate the complex day-to-day activity of their professions rather than focusing on the disciplinary conventions of a workplace genre and writing a pretend transactional document. It is a different cognitive challenge from asking: *Do you know how you would write client correspondence if you were a practicing accountant?*

Typically, the first-person fiction assignments required that students cast themselves as professionals five to ten years after obtaining their undergraduate degree, using an imaginary setting occurring in the workplace. For instance, aviation students displayed cockpit resource management techniques as well as knowledge of flight technology in a working day in their lives as commercial pilots. Sociology and computer science students in two other courses, sociology of gender and software engineering, also described a day-in-their-life ten years hence but this time using multiple settings—home, commute, and free-time activities as well as the workplace. For the computer science students, this thinking was triggered by the first prompt given to them during an in-class brainstorming session to start the project:

> Freewrite for five minutes, jotting down any phrases, specific details, imagery, terminology in a list format—phrases and sentences which come to mind when asked: *Imagine yourself five years from now. What is your ideal professional experience in a day-in-the-life scenario as a programmer five years into the future?* For instance, what sort of company do you want to work for? What's the name of the company? Where is it located? Where are *you* located (if you're telecommuting)? Write down anything which comes to mind.

Students imagined their job as a Human Resource director or encountering their new next-door neighbor, a stay-at-home dad with a high-powered wife and a Baby Bjorn strapped across his chest, toddler toys spewing over the driveway. They wrote about working as a younger co-pilot faced with a lack of clear communication with an older and higher-ranking pilot. They created workplace scenarios as programmers in which a fictional client's project is positively affected by the physical arrangement of the workplace (a Google HQ-style gourmet cafeteria and a room to practice yoga) or hampered by a change in the group dynamic (a colleague undergoing a marital separation).

Implementing and Grading the Project

The CWAC team-taught ventures I describe in this article were all tied to a substantial portion of students' final course grades—ranging from twelve to thirty-five percent—and involved multiple drafts and a workshop session. These ventures entailed a single major writing project inside another faculty member's course in the disciplines—and not the full-semester creative writing focus as described by Nancy Welch and Sandra Young. In this case, the amount of collaboration with the instructor from the discipline was fairly high in order to help the students engage each of the parts of the writing process. Through this sort of intensive collaboration and the provision of this support from a rhetoric and composition/WAC specialist, CWAC assignments can become a possibility for most faculty across the disciplines. That said, not every CWAC project requires this level of collaboration—as evinced in the soloist successes of Patrick Bahls and David Zehr.

For example, one recent collaborative venture, in the above-mentioned 300-level software engineering course, entailed two initial meetings with the professor from the computer science department to discuss ways in which the CWAC project could address his learning outcomes for his course. Using this information, I designed prompts that were extensive and specific, the professor provided feedback on these prompts, and we developed a teaching plan for my visit to his class. On the day of the classroom visit, the professor and I team-taught the heuristics, allowing students in-class time to develop freewritten answers to them. I returned to the programming class a second time to co-facilitate a workshop session in which students provided peer feedback as well as engaged in in-class revision on their own drafts using prompts designed to address certain content areas and fiction-writing techniques (see Appendix A). While not every WAC facilitator may opt for using peer review, I find it to be an invaluable part of the writing process for its propagation of possibilities about form and content, providing students with a larger range of revision ideas than can be provided by instructor-readers.

The extent to which creative writing assignments should be graded varies between CWAC practitioners. Art Young, for instance, has consistently advised against grading these assignments in order to keep them low-stakes and informal: "I do not grade or write evaluative comments on the poems. . . . Many people are already anxious at the prospect of writing a poem because it may be an unfamiliar task, and concern about a grade may heighten anxiety and reduce creative exploration" ("Poetry" 217). Patrick Bahls grades drafts but only as a measurement of effort: "in order to keep the stakes low and to nurture a safe environment in which students could feel free to explore, students were graded only on whether or not they completed each stage of the assignment" ("Math" 80).

In the CWAC project for the software engineering course, students were not expected to produce high-quality literature but were instead evaluated—and only in part—on whether they paid sufficient attention to various creative writing devices and whether they had sufficiently engaged in the writing process. Students had several deadlines for drafts, all of which carried a portion of the project's final grade: they sent us their initial brainstorming, an outline or two-page draft, their peer feedback on workshop day, a revised draft, and the final draft. Fifty percent of the grade for the project was calculated by whether they had completed the different stages of the process in a timely fashion. The remaining fifty percent of the grade, determined by both instructors, was based on students' use of descriptive techniques (contemporary and technological detail, imagery, sensory information, setting) and the development of a two-scene narrative timeline (involving two separate moments in time in order to better show change in the plot and disciplinary content). Students were evaluated on how well they explored the following areas specific to the field of software engineering, doing so largely through character development and dialogue: teamwork dynamics, internal/group communication dynamics, and external communication dynamics. Our grading rubric for the final draft was modified from Patrick Bahls' *Student Writing in the Quantitative Disciplines* to designate percentage points for each category of effort and to link ten percent of the grade to use of description and ten percent to use of narrative (See Appendix B).[2]

Critical Thinking Through the Development of a Futuristic Plot

Through a composing and revising process, with this futuristic first-person fiction assignment, students eventually transitioned from early brainstorming and freewriting work, which was closer to the intermediary-expressive stage, to the poetic discourse of a polished story. Although students were briefly introduced to the assignment and told they would be writing a final draft in the genre of a short story, initial tasks resembled more expressive than fully formed poetic discourse. The first set of prompts given during the initial in-class session asked students to begin drawing personal connections with material covered during the semester as possible application to creative writing without having to actually utilize creative writing devices. For instance, students were asked to brainstorm for characters who would become members on fictional software project teams, listing information about each character's age, gender, name, personality type, race, work experience, and personality type. Other creative writing devices students were asked to brainstorm about included setting, time line, and characters (not team members but instead supervisors and clients). Students linked course concepts and creative writing devices in an outline format for their rough draft and began trying out creative writing devices in their second draft. As they composed that second draft and revised according to responses

obtained during a peer workshop and from instructor-provided revision prompts, students increased their engagement with poetic discourse by working hands-on with creative writing devices.

At all stages of this assignment, fictional narrative served as a mechanism through which students could articulate course knowledge in their discipline. According to James Kalmbach and William Powers, narration promotes comprehension because it requires the careful sorting through of detail: "Narrators must sort out from such quantity of detail only those events which seem important or significant to the story at hand. . . . This process of selection is a form of understanding" (101). To compose the speculative fiction assignment, students needed to review in their minds concepts covered in the course, critically consider and select which concepts they would realistically encounter in a day at work ten years in the future, and determine how to relate those concepts to other matters—both to fictional elements and additional course material.

In addition to organizing detail, narrative also asks students to make meaning through the establishment of a time line (Peterson-Gonzalez). To help the computer science students develop a narrative, we asked:

> Thinking of the first day of starting a new project, design a straight narrative time line for that day. When will you start depicting that work day? What will be the highlights? Make sure that those highlights display a quantity of professional information and course concepts. In a three-minute brainstorm, come up with four different moments in that straight time line of a day at work starting the project.

Students crafted a variety of time lines with scenes including lunch meetings, the news of a colleague's involvement in a car accident, presentations to clients, and post-project celebrations all of which (due to the nature of their future profession) centered around the sine qua non of successful software engineering—whether the programmers met the client's deadline. As students worked with one element of narrative, flashback, they were able to consider critically the impact of a particular strategy or element in programming.

In a prompt, students were asked:

> Another plot development: on the first day of the project, something about it reminds you of a previous project in which there arose a problem in requirements. What happened back then? Were the goals not clear? Were there too many goals or were the goals changed in some way? In a three-minute brainstorm/freewrite, create details and use this later as a flashback inside your story.

One student developed a flashback to explore the problems that arise when programmers fail to use layperson's terminology when communicating with a client:

> I remembered years ago when we were just starting up. We met with the client, asked some questions and then assumed that we knew better, that the client is dumb, and we were the smart ones. As a result, we implemented features which the client didn't need and missed the features that the client actually needed. We lost the client; he refused to pay for something half-finished that he didn't need.

In his story, the student tries to imagine the point-of-view of the client and how foreign the software engineering environment may be to her: "Next day, Ms. Smith walked in our office staring as if she was looking at the landscape of another planet [though] the area was nothing special, some workstations scattered around a huge round desk and strange symbols filling writing boards hanging on the wall." He shows himself remembering the lesson of that flashback and avoiding a repeat of the mistake by asking the client about intended audience, priority features, and future applications of her commissioned program. Overall, this type of work with narration helped students engage in inductive thinking: if they followed one programming method, what would occur, given the fictional scenario—and what modifications would their team of characters need to make in order to meet the deadline for the software project? Through increasingly more refined work with poetic devices, students were able to critique their assumptions about the human dynamic inherent in software engineering. An early prompt challenged students with the following interpersonal scenario:

> There's something "up" with one of the team members. What is it? Has something drastic changed in their personal life? Has their attitude to their job changed, and if so, why/how so? Or are they a brand-new team member? In a three-minute brainstorm or freewrite: Develop an image: something about their work space and some gesture or small action they do which suggests their status. Use this detail later inside your story.

Students came up with disgruntled colleagues who are secretly on the job market, pregnant colleagues, colleagues with bad backs, colleagues distracted by wedding plans, arrogant Ivy League degree-holding colleagues, and colleagues undergoing marital problems. As they developed drafts, students showed themselves examining their assumptions about their colleagues by depicting themselves negotiating or confiding with other characters.

One course concept examined through creative methods was Brook's Law: the phenomena in which adding programming personnel to a team because a product

is falling behind schedule has the effect of making the product's delivery even later. To that end, one student depicts himself as technical development manager in his branch office having to stick by his decision to use pair programming (only two people per group) when a subordinate comes to him requesting additional teammates to ease the stress of a deadline.

Later on, through revision prompts on the advanced draft of this project, students were asked to identify which course concepts were being implicitly conveyed in a passage from their drafts and to think of two additional ways in which those concepts could more substantially influence the plot. They then extended that exploration of course concepts through additional character or plot details or by allowing the workplace setting to play a factor in those concepts and in the imaginary team's performance.

Pilot Study Findings and Conclusion

In the pilot study I conducted in my most recent CWAC venture, computer science students were administered a Likert scale-based survey before starting the speculative fiction project and again after completing the project. The sample was limited (only nine of the twenty-four students were present on the class meeting in which the post-survey was distributed), and the results cannot be claimed to be generalizable from this particular instance of CWAC research. However, the pre- and post-test surveys suggest improvement in student perception of the import of social factors on programming including client interactions and the impact of the workplace setting. The most significant change in student perspective from prior to the assignment to after the assignment's completion is evident in students' responses to the survey statement, "I believe that successful programming depends as much on social and psychological factors as it does on technological knowledge." Students' responses moved from Agree to Strongly Agree and from 6.8 to 8.1 on the Likert scale (see Appendix C).

When creative writing is construed as merely a matter of that customary lineup of introductory, intermediate, and advanced craft workshops taken chiefly by English majors, there's a missed opportunity for a unique mode of learning. As individuals create any poetic object—whether a poem, story, memoir, play, and so forth—they concentrate on manipulating various literary devices to make that verbal object. Due to a focus on line breaks, iambic pentameter, or an omniscient narrator, students gain an objectivity on course material and a distance from their own views of disciplinary concepts. Creative writing could be used powerfully more often across the curriculum in order to advance critical thinking in the disciplines. The futuristic narrative assignment described in this article helps students speculate on their lives, their majors, their professions—not to mention the course material studied all semester. Creative writing in the disciplines allows course material to become

a vivid detail, part of a tricky plot, be batted around by complex characters—all part of a complex critical act of asking "what if?"

Notes

1. For a version of this assignment for a non-technical class, see my co-authored article with Laurie Gordy, "Bringing Creativity into the Classroom: Using Sociology to Write First-Person Fiction."

2. Bahls's rubric does not discuss grade points or percentages, indicative of the usage of the rubric in low-stakes tasks. His rubric is intended to help an instructor identify a student's "level of achievement" with a creative task. Bahls does suggest, however, that the rubric could be altered for the purposes of grading (*Student Writing* 125).

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Appendix A: Peer Workshop Handout

Instructions: Exchange drafts with another student. Read through the entire draft without making notes; read the draft a second time keeping the below questions in mind. Provide feedback to the other student by answering (in detail) the below questions.

Note: 10% of your grade on this project is based on the quality of your responses on the other student's draft. Supply careful, detailed advice.

1. What are the best attributes of this draft?
2. Where do you want more material?
3. Ask at least 3 questions concerning the project and/or company depicted in the story. What sorts of detail would better help you understand the student's workplace experience? Another way of thinking about this: if you were just talking to the student about his job, what are 3 questions you'd naturally have about his workplace experience?
4. Pick 2-3 scenes in the draft which involve an interaction between 2 or more characters. (One of the characters could include the student, so a first-person "I.") *Can you tell which course concepts are being implied through the scenes?* List those course concepts and explain how you know from the descriptions and interactions of the characters that those concepts are being implied.

5. How could the student do a stronger job of implying those concepts in question #4? To that end, give them advice on the following:
   a. Gestures
   b. Physical descriptions
   c. Dialogue
   d. Setting details

6. Let's take the character interactions a step deeper now. In question #4, Characters A, B, and C do something, suggesting that Z (course concept—something about the psychology of programming & teamwork) is going on. *Because Z is going on, what happens NEXT in the plot? How does Z affect the programming project?* Give the student 2 suggestions as to how each of the course concepts you identified in your answer to question #4 could *affect what proceeds*.

Appendix B: Rubric for Final Draft

Criterion	Not Met (0-3 points)	Partially Met (4-7 points)	Fully Met (8-10 points)
Project demonstrates student's OVERALL understanding of teamwork dynamics in software engineering 10% OF GRADE	Student's project demonstrates no (or poor) overall understanding of teamwork dynamics	Student's project demonstrates partial understanding of overall teamwork dynamics, but some aspects remain elusive	Student's project demonstrates solid understanding of overall teamwork dynamics (with only minor errors)
Project demonstrates student's understanding of course concepts: *internal/group communication issues in software engineering* 10% OF GRADE	Student's project demonstrates no (or poor) understanding of related concepts	Student's project demonstrates partial understanding, but some aspects of course concepts remain elusive	Student's project demonstrates solid understanding of course concepts (with only minor errors)
Project demonstrates student's understanding of course concepts: *external communication issues in software engineering* 10% OF GRADE	Student's project demonstrates no (or poor) understanding of related concepts	Student's project demonstrates partial understanding, but some aspects of course concepts remain elusive	Student's project demonstrates solid understanding of course concepts (with only minor errors)
Project demonstrates student's effort to achieve literary or aesthetic merit (whether or not this merit is fully realized): *descriptive techniques* 10% OF GRADE	Student's work shows no or little effort (it is sloppy and hastily formed)	Student's work shows some effort (some care is taken in its crafting; improvements have been made on a rough draft)	Student's work shows considerable effort and attention to detail (it is polished; effort is made to ensure aesthetic appeal)

Criterion	Not Met (0-3 points)	Partially Met (4-7 points)	Fully Met (8-10 points)
Project demonstrates student's effort to achieve literary or aesthetic merit (whether or not this merit is fully realized): *narrative techniques* 10% OF GRADE	Student's work shows no or little effort (it is sloppy and hastily formed)	Student's work shows some effort (some care is taken in its crafting; improvements have been made on a rough draft)	Student's work shows considerable effort and attention to detail (it is polished; effort is made to ensure aesthetic appeal)

Appendix C: Pre- and Post-Survey Results

N=9

Strongly Disagree				Agree				Strongly Agree	
1	2	3	4	5	6	7	8	9	10

	Pre-Survey Average of Responses	Post-Survey Average of Responses	Amount of Change
I know how to write a quality fictional narrative.	6.5	7.5	1.0
I know how to put important course concepts in my own words.	6.9	7.9	1.0
I have confidence in my ability to write a fictional narrative that incorporates important course concepts.	6.9	7.7	0.8
I believe that successful pro-gramming depends as much on social and psychological factors as it does on technological knowledge.	6.8	8.1	1.3
I believe there is an important relation between physical work space and social structure of programming.	7.7	8.5	0.8
I believe it is important not to assume that a client shares the same understanding of programming terminology that I do.	8.5	9.3	0.8

	Pre-Survey Average of Responses	Post-Survey Average of Responses	Amount of Change
I believe that creative writing can increase my understanding of course content.	6.2	7.0	0.8
I believe that creative writing can increase my interest in course content.	5.5	6.4	0.9