

1. Summary of Writing Instruction and Student Writing Activities

WDI-Supported Course Structure

For the fourth year, a Writing Development Initiative award allowed for additional instruction in ENV201 that emphasized writing styles used in upper-level ENV courses and by environmental professionals. Through the WDI, (1) TAs were able to attend the RGASC Writing TA Training Program to ensure they had the necessary knowledge to support instruction and assessment of student writing, (2) four additional writing-based tutorial sessions were offered, (3) four writing-focused assignments were used, and (4) TAs were able to grade an additional assignment (as compared to non-WDI offerings of ENV201).

The WDI-supported writing tutorials occurred every other week, opposite the traditional discussion-based tutorials. This created a structure where an assignment was introduced in a discussion-based tutorial; the following week the writing-based tutorial addressed the type of writing required by the assignment; and the third week students turned in their assignments, discussed the topic associated with the assignment, and received the next assignment. The cycle repeated itself over nine tutorial sessions (5 discussion-based and 4 writing-focused) and four written assignments.

Mirroring past WDI years, the TAs were provided with detailed packets for each writing tutorial session, which have been updated and improved over the last four years. Each packet includes (1) the central learning objective(s) of that tutorial-assignment pair, (2) a script outlining the background information to be provided to students in tutorial (e.g. definitions of summarize and paraphrase), (3) slides and/or handouts to accompany the script, (4) an in-class exercise directly related to the skills associated with the learning objective, and (5) detailed information on the assignment requirements and assessment criteria. The packets were given to the TAs at the start of the term to ensure instruction and assignment information in all tutorial sections was consistent.

Details of Writing Activities and Supporting Instructions

The writing assignments and tutorial sessions addressed the following four areas: reverse outlining; paraphrasing, summarizing, and synthesis; summarizing key results from empirical data tables, and persuasive essays. The reverse outlining was newly added this year, replacing a critical reading assignment, so is discussed in more detail below. The remaining assignments and supporting tutorial sessions largely followed the same process as the prior year, with some minor changes to improve clarity of the assignment or tutorial material.

A reverse outline assignment and instruction was added to ENV201 after consulting with instructors of upper-level ENV courses. All instructors agreed that organization within and between paragraphs was the most common weakness of students' written work. Thus, a reverse outline was presented as a way to evaluate the organization and flow of paragraphs after writing an initial draft. The reverse outline tutorial presented what a reverse outline is, the reasons one may use it to improve their own written work, and the basic process of creating and evaluating a reverse outline. The TAs also used time in this tutorial to present norms around citing of

reference material, which is reinforced in the second writing assignment-tutorial pair that addresses how to properly paraphrase or summarize written material. Students also worked through a reverse outline of the introduction of an academic article in tutorial. The assignments required them to make a reverse outline of an assigned article, as well as answer some specific questions about the content of the article.

2. Project's Effectiveness

This WDI reached the 153 students enrolled in the course. As ENV201 is a required course for all Specialists, Majors, and Minors in Environmental Management and Environmental Science, the initiative ensures all ENV students receive this instruction.

One hundred and twenty-eight out of 153 students enrolled at the end of the term completed a survey evaluating the effectiveness of the assignments and tutorials. It was handed out during the last tutorial session. The first three statements in the assessment sheet (Tables 1-3) addressed students' experiences with the assignments. The most common responses for all but one statement and assignment was a 5, the most positive option. Additionally, the average response was above 4 in all but one case, indicating the majority of the students felt that the writing goals, assignment steps and marking matrix were clearly communicated on the assignment sheet or in tutorial.

Table 1. Statement: The writing goals associated with the assignments were clearly communicated.

Topic	Not at All 1	2	Somewhat 3	4	Very useful 5	Average Raw Score
Assignment 1 (Reverse) Outlining	2	1	13	41	44	4.24
Assignment 2 Descriptive Writing	2	5	21	37	34	3.96
Assignment 3 IMRD, Quantitative Data	2	3	18	37	41	4.13
Assignment 4 Argumentative Writing	3	1	16	33	48	4.23

Table 2. Statement: The steps needed to complete the assignments were clearly described on the assignment sheet or in tutorial.

Topic	Not at All 1	2	Somewhat 3	4	Very useful 5	Average Raw Score
Assignment 1 (Reverse) Outlining	2	3	13	19	64	4.41
Assignment 2 Descriptive Writing	2	6	18	24	50	4.13
Assignment 3 IMRD, Quantitative Data	2	2	14	29	53	4.29
Assignment 4 Argumentative Writing	1	4	17	19	59	4.32

Table 3. Statement: The marking scheme was clearly presented on the assignment sheet or in tutorial.

Topic	Not at All 1	2	Somewhat 3	4	Very useful 5	Average Raw Score
Assignment 1 (Reverse) Outlining	2	3	9	32	54	4.34
Assignment 2 Descriptive Writing	1	3	14	33	49	4.27
Assignment 3 IMRD, Quantitative Data	1	3	12	33	51	4.30
Assignment 4 Argumentative Writing	2	3	12	31	53	4.30

The last three statements on the survey (Tables 4-6) referred to writing instruction during tutorial sessions. The most common responses were either 4 or 5 (the highest ratings), with the average answer hovering around 4. Thus, most students felt the writing instruction not only helped with the associated assignment, but improved their writing skills in specific ways that would be useful in other classes. The writing instruction associated with the fourth assignment (argumentative writing) was identified as slightly more useful than the other assignments. While the reverse outline tutorial received relatively high ratings for helping to complete the assignment and improve writing skills, it was the lowest ranked for the question asking about usefulness in other classes. This may reflect the nature of the assignments in other (second year) courses, or students' uncertainty about how to apply the technique when completing written assignments in other courses.

Table 4. Statement: The tutorials addressing writing skills helped me complete the assignment.

Topic	Not at All 1	2	Somewhat 3	4	Very useful 5	Average Raw Score
Assignment 1 (Reverse) Outlining	1	2	17	37	42	4.17
Assignment 2 Descriptive Writing	2	7	18	41	31	3.91
Assignment 3 IMRD, Quantitative Data	2	4	20	41	33	3.98
Assignment 4 Argumentative Writing	1	5	18	31	45	4.14

Table 5. Statement: The writing instruction provided in tutorial has helped me improve my writing skills.

Topic	Not at All 1	2	Somewhat 3	4	Very useful 5	Average Raw Score
Assignment 1 (Reverse) Outlining	1	4	27	36	32	3.94
Assignment 2 Descriptive Writing	3	5	29	34	29	3.81
Assignment 3 IMRD, Quantitative Data	2	4	30	38	26	3.81
Assignment 4 Argumentative Writing	2	2	28	36	33	3.95

Table 6. Statement: I believe that the writing skills presented in tutorial will be useful/have already been useful in other classes I will take at UTM.

Topic	Not at All 1	2	Somewhat 3	4	Very useful 5	Average Raw Score
Assignment 1 (Reverse) Outlining	5	5	23	29	38	3.90
Assignment 2 Descriptive Writing	2	5	21	33	40	4.05
Assignment 3 IMRD, Quantitative Data	3	3	19	37	38	4.05
Assignment 4 Argumentative Writing	1	2	16	31	50	4.27

Ninety-five of the 128 surveys included answers to at least one of the two long-form questions: (1) what is the most useful thing that you've learned about academic writing this term and (2) do you have any suggestions as to how the writing instruction in this course could be improved or changed. However, the majority of the 95 answered the first question and not the second.

In response to the question about the most useful thing that students learned about academic writing, common responses included how to properly cite material, develop a thesis, summarize and paraphrase material, and create a reverse outline. These topics are all explicitly covered in the writing tutorials. Based on the written comments, reverse outlining was the topic that students were least familiar with prior to the class. For example one student wrote: "The reverse outlining. It was a tool I was previously unfamiliar with but now makes a lot of sense". Some other comments reflected material that was not an explicit learning objective, but likely came up in tutorial discussion or through assignment feedback:

- "Learning passive and active voice"
- "Attention to tense and sentence structure"
- "How to write using scientific words"
- "Getting straight to the point without adding unnecessary fluff"

In terms of suggestions for how the writing instruction could be improved, some students wanted more examples of different writing styles, including examples from previous students: "Maybe show more examples of past student work that was well done", but most students did not provide any suggestions.

A few students felt the focus on writing in the class was not appropriate:

- "Do more data collection assignments and quizzes. Writing assignments focus too much on writing rather than course material."
- "I thought this would be an environmental management course, not a writing course! ENV201 not WRI201"
- "Assignments might wanna focus more on lecture"

3. Future Steps and Needed Improvements

Over the last four years, I have modified the WDI related tutorials and assignments based on student and TA feedback. I believe that these activities are now focused on concrete learning objectives that are clearly presented and reinforced through in and out of class hands-on exercises. There is component within the course and two UTM-wide issues that need to be addressed to achieve the broad goal of improving students' written communication skills. The UTM issues are ones I have raised before, but need to be mentioned again as no real changes have been made.

ENV201

Last year within the course we identified students' weak ability to summarize and paraphrase others' work properly (i.e. not copying and pasting and using in-text citations where necessary). Additionally, we wanted to address poor organization of ideas within a paper. Thus, the reverse outline was included as it provides a strategy for students to use to improve paragraph and overall paper organization, and introduces summarizing. Due to time constraints, however, students were not able to apply the reverse outline to their own work (through a formal assignment). Next year I would like to focus on ways that a reverse outline can be incorporated so that the students write a draft, create a reverse outline and then make revisions after the outline is made, so it becomes a more concrete exercise in editing one's own work.

UTM

There are two broader limitations associated with this WDI that based on my multi-year experience with the WDI program require attention at the UTM-level. First, students need much more practice with correct grammar and paper structure, through detailed feedback of their written work that is beyond the scope of this course (even with a WDI and expanded reverse outline assignment). We do not and should not have to provide instruction on basic paragraph structure, crafting informative and concise sentences, and correct grammar. Yet this is the type of instruction many students need.

Second, some (although not all) students are confused by the writing-focus in an environment course. They see it as taking time away from instruction on content of the course and they do not see the relationship between subject-specific course work and writing. I believe this is in part because UTM does not emphasize writing instruction, outside on a varied set of WDIs, so students believe that learning to write is something they did in secondary school and should not be part of their university education. UTM certainly reinforces this belief. A required first year writing course would both dispel the notion that writing instruction and improvement ends with secondary school, while also actually helping students develop their writing skills.